TRAVELLER®

CENTRAL SUPPLY CATALOGUE
UPDATE 2023

SCIENCE FICTION ADVENTURE IN THE FAR FUTURE

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UPDATE 2023

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good evening
DIGITAL FRIENDS!
SATELLITE
SUSPICIOUS?

Dreams about the future are always filled with gadgets.

- Neil DeGrasse Tyson

INTRODUCTION

Welcome to the *Central Supply Catalogue Update 2023*. This book contains a variety of equipment Travellers might want, need or wish they had as they cross the galaxy. This book is intended for use with any *Traveller* universe, not just the Third Imperium. Where possible, this book does not make assumptions about specific universes or milieus. Whether any particular item or class of items in the *Central Supply Catalogue* exists in any given *Traveller* universe is at the discretion of the Referee.

This book covers equipment to be purchased, not designed. Rules for constructing spacecraft are covered in *High Guard*, vehicle designs are covered in the *Vehicle Handbook*, weapons in the *Field Catalogue* and robot designs are covered in the *Robot Handbook*. Those books also include many completed designs for spacecraft, vehicles, weapons and robots, respectively, therefore those items are not included in this book, although a number of standard spacecraft and vehicles are provided in the *Traveller Core Rulebook*. This guide does contain an extensive listing of weapons and specialised ammunition.

Many of the items presented herein are drawn from the publications of earlier *Traveller* versions. Some contradictions and repetitions have been resolved but a large part of what is presented here came from earlier editions of the game. However, there are many new items, too. Some of the items in this book are also listed in the *Traveller Core Rulebook* and included here for completeness. This allows the *Central Supply Catalogue* to present a unified list of equipment for the Traveller. It is not intended to be complete, nor to preclude the existence of similar items, and it does not include items designed for specific aliens nor every item listed in various adventure modules or issues of the *Journal of the Traveller's Aid Society*.

While this is primarily a book of things to buy, it also contains new rules for equipment and weapons, details the permits and the legality of certain items and the likelihood Travellers will find what they are looking for on any given world. It also provides rules and limitations for creating objects through fabrication, whether 3D printing a spare doorknob or a new limb.

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EQUIPMENT AVAILABILITY

Travellers have likely dived straight into this book and started making lists of all the items they think they will need in the next adventure. This is as it should be but Referees will have an interest in limiting the availability of more exotic equipment in order to maintain the balance of their own campaigns and to keep special items *special*.

There are two methods of doing this:

- **Law Levels:** These are detailed beginning on page 255 of the *Traveller Core Rulebook* and will be the primary consideration of most Travellers when looking for worlds on which to both purchase and use equipment.
- **Availability:** Just because something is legal, it does not automatically follow that it is available in a shop at the starport – or indeed anywhere in the entire system or even in any specific *Traveller* universe. This chapter presents rules for the Referee to gauge the relative availability of any item they judge to be special or otherwise restricted.

AVAILABILITY

Whenever a Referee deems equipment may not be present or easily found, they may ask the Traveller to roll for the item's Availability. This should principally be done for highly unusual, dangerous or expensive items. Referees are free to apply this rule as they see fit, in accordance with their own campaign. Camping gear is likely going to be easy to find without needing to check its Availability, whatever planet the Traveller is on, but a disintegrator rifle will be extremely rare in any universe.

When a Traveller needs to check for the Availability of an item, this requires an Average (8+) Broker or Streetwise check and with the modifiers on the Availability table. On worlds with Population 0, all items will be unavailable except under extraordinary circumstances. On worlds with no prior interstellar contact, any items above the local Tech Level will be extremely rare and have an artefact-like status; they will rarely be for sale and any acquisition by the Traveller will likely require an adventure, not a dice roll.

If the check is successful, the item has been located and may be purchased. If the check is unsuccessful, the Traveller may try again weekly but there is DM-1 per previous attempt on a world in the same month.

Availability Table

Circumstance	DM
Item is considered highly specialised	-1
Item is typically reserved for military use	-2
Item's TL is greater than the World's TL	-1
Item's TL is 3–4 above the World's TL	-1
Item's TL is 5–9 above the World's TL	-2
Item's TL is 10 or more above the World's TL	-4
Traveller willing to pay double listed cost	+1
Traveller willing to pay triple listed cost	+2
Starport Class A or B	+1
Starport Class X	-4
World has Hi, Ht, In and/or Ri Trade Codes	+2
World has Lt, Na, Ni, and/or Po Trade Codes	-2
World Population 1–2	-2
World Population 3–5	-1
World Population 9	+1
World Population 10+	+2

REFEREE'S FIAT

In addition, a Referee may apply a modifier from DM-3 to DM+3 to reflect equipment that is easier or harder to find, rare or common on the present world, or features technology the Referee is or is not keen to see proliferate in the campaign!

TECH LEVEL AND LAW LEVEL

Under normal purchasing conditions, an item unlikely to be found on a world due to its Tech Level being too low or Law Level being too high should not be made available to Travellers. However, there may be exceptions where Referees create a mini-adventure in order to locate such items. Most items of lower Tech Levels will be available in some more 'modern' form on many worlds but specific items, such as a full suit of plate armour or an astrolabe, may not be available at all if it has been superseded by something better.

THE BLACK MARKET

Wherever items are restricted or banned, a black market will arise to supply them. This will allow a canny Traveller to make necessary purchases even on high

Law Level worlds, however they will need to take care to avoid discovery or feel the full weight of the system's law – both for possession of illegal items and purchasing them in an illegal fashion.

The black market of any world can be accessed using the Availability rules covered previously but with four additional complications:

- Only Streetwise checks may be used for availability on the black market, never Broker.
- Additional modifiers are imposed on the check, dependent on Law Level and item sought.
- The item purchased will be much more expensive than if purchased legally.
- A negative Effect of -2 or worse on the Streetwise check will result in attention from law enforcement.

The modifiers used on Availability checks using the black market are listed on the Black Market table.

Black Market

Circumstance	DM
Law Level 0	+2
Law Level 1–3	+1
Law Level 4–6	+0
Law Level 7–9	-1
Law Level 10+	-2
Category 1 Item	+4
Category 2 Item	+2
Category 3 Item	+0
Category 4 Item	-2
Category 5 Item	-4
Prohibited Item	-6

As seen on the Black Market table, there are five categories of items (and one classification of 'prohibited') that dictate how easy or hard they are to find. They also dictate the price a Traveller using the black market is going to pay.

Examples are given for each category but, ultimately, it is up to Referees to decide how an item is viewed by any given world in their universe. The descriptions for each category are also useful for determining if the item is available by legal means.

CATEGORY 1: UNRESTRICTED

So long as the item is legal in a star system, even someone convicted of weapons-related crime can usually own it without interference, although some localities place additional restrictions on felons. While these items are not technically illegal, a Traveller in an unusual position may be forced to use less than legal methods to obtain them and the black market is only too happy to oblige.

Price: x2
Examples: All melee weapons (cutlasses, daggers, batons, shock batons and so forth), non-lethal firearms (stunners) and bows and other archaic weapons.

CATEGORY 2: CIVILIAN USE

These items are usually legal but require residents to demonstrate the 'capability of safe use', either by owning a permit or by undertaking accreditation and safety training. No actual skill or reason for purchase is required but visitors from other worlds may find the bureaucratic requirements for legal ownership time-consuming or necessitating local knowledge, forcing them to the black market.

Price: x3
Examples: Revolvers and most other pistols, semi-automatic rifles, shotguns and similar non-military weapons.

CATEGORY 3: PARAMILITARY USE

To legally own this sort of item (if the world's Law Level permits it), Travellers must show they can use it responsibly and safely (possessing skill levels relevant to its use is usually sufficient) and must demonstrate 'suitable need'. The latter is usually covered by occupations such as shipboard security operative, skip tracer, bodyguard and so on.

Price: x5
Examples: Light automatic weapons (autorifles, assault rifles, submachine guns and so on), specialised ammunition, laser weapons, cloth armour and flak jackets.

CATEGORY 4: MILITARY USE

These items are similar to those in category 3 but restrictions are tighter, usually requiring service as an accredited mercenary or similar.

Price: x10
Examples: Gauss weapons, advanced combat rifles, support weapons (such as grenade launchers and machineguns), military-grade electronics (such as sensors), electronic warfare equipment, combat armour and light military combat vehicles (including armoured cars and personnel carriers).

CATEGORY 5: RESTRICTED MILITARY USE

Category 5 items are only legally available to accredited mercenary units or personnel with a good record of serving in such a unit while actively seeking a suitable unit or employer. This does not prevent a merchant captain from shipping quantities of such weapons from one place to another, provided they are properly crated and documented, but they cannot be legally sold without proper permits.

Price: x20
Examples: Plasma and fusion weapons, missiles, heavy military combat vehicles (including tanks and fighter aircraft), battle dress and combat robots.

PROHIBITED ITEMS

These items are subject to a blanket prohibition across all civilised worlds. Special permits are required to possess them (which are hardly ever granted to individuals) and stiff penalties are in place for those who break these laws. In the Third Imperium, even governments are subject to these laws and must account for all prohibited items. The Imperial Bureaucracy conducts random audits to ensure compliance.

Price: At least x20
Examples: Nuclear weapons, antimatter power systems, chemical and biological weapons, starship-grade meson guns and particle accelerators, and electromagnetic pulse weaponry capable of large-scale effect.

LAW ENFORCEMENT

If an Effect of -2 or worse is rolled during a Streetwise check when determining Availability of an item on the black market, the system's law enforcement agencies will become involved. This is bad news for the Traveller concerned.

If this happens, roll 2D and deduct both the Effect (apply it as a negative) and the system's Law Level, then consult the Law Enforcement Response table.

Law Enforcement Response

2D - Effect - Law Level	Response
-6 or lower	Apprehend
-2 to -5	Investigate
0 or higher	Check

Check: This result means the Traveller's travel documents and identity is checked, either by a police officer or electronically querying the Traveller's comms. A successful Admin or Streetwise check can allay suspicion but if failed, the planetary authorities move on to Investigate.

Investigate: This results in a detective or bureaucrat probing deeper into the Traveller's background. If the Traveller has a ship, it will be searched. The Traveller may be followed or have their communications tapped. They are also likely to be questioned closely.

Apprehend: The police show up ready for a fight. Their response will generally be proportional to the threat posed; if the Traveller is just trying to purchase a low category item on a street corner, then most police forces will use batons, stunners, tranq gas and other non-lethal weapons. On the other hand, if the Traveller is in battle dress and trying to purchase a nuclear weapon, the police will show up with the best weapons and armour available at the planet's Tech Level (or even a few levels higher), with the army not far behind.

Travellers arrested for attempting to make a purchase on the black market will face punishment, determined by rolling on the Sentencing table.

To the 1D roll, the Traveller must add the highest category (+1-5) of the items being purchased. Prohibited items add +6 to the 1D roll and any additional dice modifiers.

In addition, the Traveller must also add the difference between the planet's Law Level and the banned goods in question.

For example, laser weapons are Category 3 items banned at Law Level 2, so a Traveller found with a laser weapon on a Law Level 6 world would have DM+7 on the Sentencing table.

A Traveller with the Advocate skill may attempt to reduce the severity of sentencing by making an Average (8+) check. If successful, reduce the Sentencing DM by the Effect of the check.

Sentencing

1D+DMs	Sentence
0 or less	Dismissed or trivial
1–2	Fine of 1D x Cr1000 (per item)
3–4	Fine of 2D x Cr5000 (per item)
5–6	Exile or a fine of 2D x Cr10000 (per item)
7–8	Imprisonment for 1D months, exile or fine of 2D x Cr20000 (per item)
9–10	Imprisonment for 1D years or exile
11–12	Imprisonment for 2D years or exile
13–14	Life imprisonment
15 or more	Death

A result of Exile means the Traveller must leave the planet immediately and never return.

FABRICATION CHAMBERS

Purchasing a physical object is one way of acquiring equipment. Another method is to build it. At lower technologies, this requires tools and a workshop. Beginning at TL8, early fabrication chambers – 3D printers – become available. A simple consumer-grade product can do little more than print plastic models but more sophisticated models can print metal and create everything from spare parts to habitation modules. Fabrication chambers are not magic, and at small scale do not replace store-bought items, but for Travellers in need of uncommon parts or far from the nearest delivery service, a fabrication chamber is another method for acquiring items, if raw materials and plans for the equipment are available.

A fabrication chamber is often referred to as a 'fabricator' or 'fab'. A TL8 basic fabricator is a straightforward 3D printer, able to lay down layers of material to form simple mechanical objects. Increasingly advanced fabricators can create objects of increasing complexity, up to and including additional fabrication chambers themselves. Most are a sealed or mostly enclosed environment, able to create objects up to a rated size usually equal to half the unit's volume. External fabricators also exist; these are useful for creating larger or irregularly shaped objects such as habitats and vehicles.

Fabricators require materials equal to the mass of the object created. These may be everything from simple powders to rare earths or more unusual materials, depending on the final product. In general, these materials will cost 50% of the cost of a similar purchased product, although those composed of purely common materials may have as low as a 10% material cost and those requiring rare elements may cost more to fabricate in small batches than to purchase from a manufacturer able to acquire such materials in bulk. Optionally, the Referee can impose a 1D x 10% materials cost for most products and a 2D x 10% materials cost for computers, robots and complicated electronic machinery.

At TL10 the improved fabrication chamber can create simple electronic devices, including the processors needed for building complete vehicles, appliances and Basic-brained robots.

A TL13 enhanced fabrication chamber can create additional fabrication chambers, even complete robots with Advanced brains. An enhanced fabrication chamber includes the technology to act as an advanced bioreaction chamber (see page 88). It can print a full organ, limb or similar replacement part, possibly infusing it with cybernetic components, but is unable to directly print a complete living organism, although it can infuse a biological creation with an artificial nervous system to be programmed as a robot or artificial being. It can lay down layers of crystaliron but has no ability to produce superdense alloys – which require a heavy industrial process at all Tech Levels.

A TL17 advanced fabrication chamber can print a complete living biological being or cyborg. It can create computers and robot brains up to full Conscious complexity. A biological brain created in an advanced fabrication chamber will be a blank slate. The printing process is not sophisticated enough to duplicate memory patterns but it can embed wafer jacks capable of acting as accelerating learning enhancers. Objects created in an advanced fabrication chamber cannot be of greater Tech Level than the chamber itself and superdense materials remain beyond the capabilities of a fabricator.

As a general rule, the listed fabrication chambers can fully manufacture any non-animate item available two Tech Levels or more prior to their own Tech Level. For instance, a basic fabricator could fully manufacture TL6 items, including auto pistols and even vacuum tube radios, while an improved fabrication chamber could manufacture a transistor radio, portable computer or other TL8 electronics. This progression holds until the debut of the TL17 advanced fabrication chamber, a device capable of turning a society into a post-scarcity civilisation, with nearly any item available on demand, assuming access to the proper raw materials.

Note that design templates for fabricated items are often patented and require licenses to produce, although pirated and open-source versions of many common – and some highly questionable – items are available. Most commercially sourced fabrication chambers are specifically blocked from creating weapons, currency, copywritten materials or controlled substances, however the specific restrictions vary by government and manufacturer.

The Fabrication Chamber Capabilities table lists fabricators of increasing complexity at the Tech Level of their introduction. Most fabrication chambers can produce items of two Tech Levels less than their constructed Tech Level but retain their complexity limits. For instance, a basic fabricator at TL8 can produce TL6 mechanical items; a TL10 version of a basic fabricator could produce TL8 items but only those with mechanical parts – an improved fabricator would be necessary to create TL8 items with simple electronics. The relationship holds until the introduction of the advanced fabricator at TL17, a device capable of producing most items up to its current Tech Level in complexity.

The Time Requirement listed for each type of fabrication chamber is a minimum to complete fabrication of an object. Brains, biological or robotic, and their 'neurological' connections quadruple construction time and complex, highly irregularly shaped objects and objects requiring high melting temperatures and cooling, such as crystaliron and certain other metals, will also double fabrication time, meaning a highly complex electronics-laden item like a robot may require as much as eight times the listed time period to be ready for extraction.

A chamber litre is a standard 10x10x10 centimetres measurement. Abbreviated as 'cl', it is commonly misattributed as 'cubic litre'. Most fabrication chambers are at least 10 centimetres in all dimensions, meaning a chamber to produce a two-metre item in one piece would require at least 20 chamber litre capacity. Items with many parts can be created in smaller chambers and assembled later. A fully utilised chamber litre might only hold one kilogram of biological material but may form up to two kilograms of dense synthetic materials or as much as eight kilograms of steel if creating a solid chunk of material. Actual usage is limited by voids, spacing and waste material. The Referee can assume a chamber litre is able to produce items of one to two kilograms mass in most instances. One Slot, as used by suits and robots is the equivalent of about 1.5 chamber litre. For installation purposes, the volume of the fabricator itself is twice that of its chamber's capacity.

Fabrication Chamber per Chamber Litre

Fabrication Chamber	TL	Kg	Cost
Basic	8	2	Cr2000
Improved	10	2	Cr10000
Enhanced	13	2	Cr50000
Advanced	17	2	Cr200000

Devices smaller than one chamber litre are available but as much of the cost is the mechanism and not the chamber, they cost as much as a one chamber litre device. In the opposite direction, a smaller mechanism can be installed in a larger chamber, doubling both capacity and time requirement at only a 50% increase in cost. This can be done twice, allowing for quadruple capacity and time at just double the cost, but beyond this limit, the mechanism becomes too fragile to operate reliably.

STANDARD FABRICATORS

Fabrication chambers are most commonly available in the sizes of one, two, five, 10, 20, 50, and 100 chamber litres. Operations requiring the live insertion for modification or the creation of an intact adult human-sized object generally requires a full 100 chamber litres, although a custom 80 chamber litre unit would likely suffice. A standard starship workshop can accommodate up to 100 chamber litres of fabrication chambers, with large workshops aboard capital ships containing extremely large custom units.

A standard fabricator is available at a 10% discount from most retailers. Custom units larger than 100 chamber litres often carry a 10–60% premium and may not

Fabrication Chamber Capabilities

Fabrication Chamber	TL	Complexity	Max TL item created	Time Requirement
Basic	8	Mechanical	TL-2	2 hours
Improved	10	Simple electronics, Computer/1 equipment, Primitive, Basic or Hunter/Killer robot brains	TL-2	2 hours
Enhanced	13	Complex electronics, simple biomechanical, Computer/2 equipment or advanced robot brains	TL-2	1 hour
Advanced	17	Complex biomechanical, any computer or robot brain	TL	1 hour

be available in smaller markets – see the Equipment Availability rules (page 4). All standard fabricators sold on worlds of Law Level 2+ contain built-in prohibitions for creating weapons, currency, copywritten materials or controlled substances in accordance with local laws. Unrestricted fabricators are considered Category 5 items on such worlds. Even when legal on Law Level 1 or lower worlds, unrestricted fabricators carry a 200–400% premium (multiple costs by D3+1).

Production of trademarked or patented goods is restricted with standard fabricators. Many manufactures may offer a limited or commercial license to replicate their trademarked goods but a limited or personal use license will restrict the number of copies available – usually by making the item cost as much as a retail version but not necessarily including the raw materials as part of the deal. A commercial license can cost 100 or more times the cost of an item, depending on the expected volume of sales and competitive factors – a corporation is normally not willing to be underbid by a copycat producer but may grant a license in markets it has little desire to serve.

Note that any government's currency is normally produced at the highest available Tech Level even if this requires importation from a nearby system, so prior to TL17, where economic systems are likely to undergo profound changes, counterfeiting currency with even an unrestricted fabricator is not likely to be successful on most technological worlds.

EXTERNAL FABRICATORS

A fabricator's complexity limitation assumes an enclosed fabrication chamber; external fabricators cannot be as precise. Prior to TL17, external fabricators can only create items three or more Tech Levels less advanced than the device. An external fabricator requires twice the amount of time to complete an item but its mass, volume and cost is only 75% as much as a similarly scaled enclosed fabrication chamber. By moving either the fabricator or a construction platform, an external fabricator can create arbitrarily large items, given enough time and raw materials. External fabricators are available in standard sizes 10 times larger than standard enclosed fabricators.

External Fabricator Multipliers

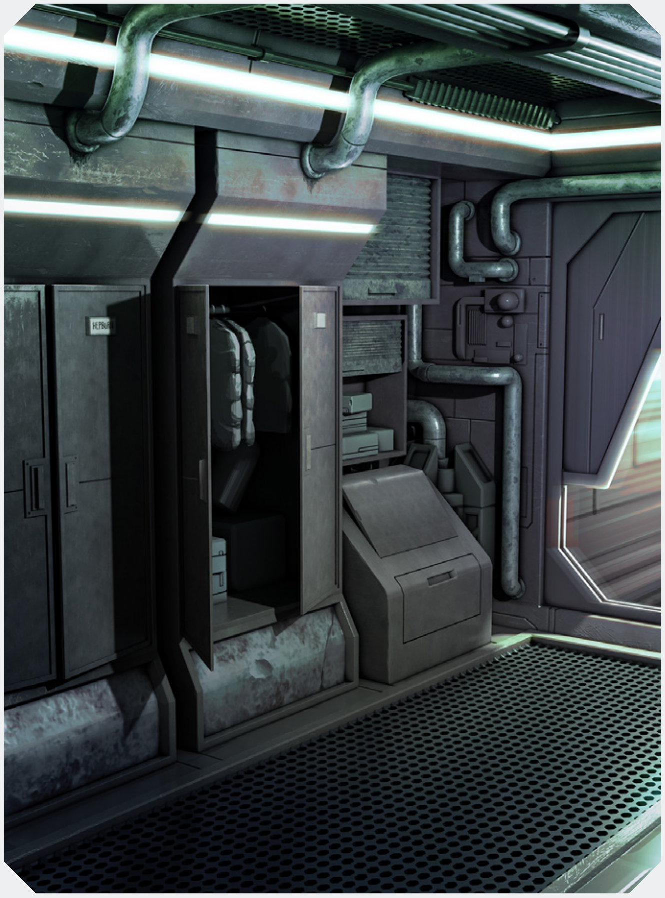
Item	Max TL (prior to TL17)	Time	Mass	Volume	Cost
External Fabricator	TL-3	x2	x0.75	x0.75	x0.75

SHIP'S LOCKER

A ship's locker does not need to include a full inventory of items from this catalogue but neither is it a bottomless pit of supplies, tools and ammunition. The Referee can assume that to maintain licensed ship certifications, the following will be available:

- Emergency soft suits for the standard crew complement, plus soft suit and/or rescue bubbles for the rated number of high and middle passengers.
- Tools including electronic, mechanical and starship engineer toolsets, bulkhead patches, one iris valve opener, one portable airlock.
- Survival kits for the rated number of crew and conscious passengers.
- One medikit per eight rated crew and conscious passengers.

If Referees and Travellers want to keep track of ship's locker equipment, they can assume a ship will start with additional equipment (typically including more advanced vacc suits, additional tools and civilian weapons) equal in value to 1/1000 the cost of the starship. This can include fabricators if the ship has a workshop and if the Referee approves.



PROTO- AND RETROTECH

The Tech Level listed for an item represents the technology of a mature item, one with most bugs worked out and manufacturing scaled up to take advantage of mass or mature production processes. For many items, improvements in technology have only cosmetic effects; a TL9 dagger might be made of better metal, become rust-proof and possibly self-sharpening but it still has approximately the same mass, cost and damage potential as the TL1 version. It may become superseded by a monoblade or a laser scalpel at higher Tech Levels but may still be available in its basic form even at TL15.

Other items may go through a period of development affecting cost, mass and features. These items are normally represented by separate entries for gradations as fine as Basic, Improved, Enhanced, Advanced and Superior, although often only three or less of these will apply. Vehicles and robots, as found in the *Vehicle Handbook* and *Robot Handbook*, have base performance changes at various Tech Levels and spacecraft, as described in *High Guard*, have components which can be modified by additional advanced or primitive features.

Most items in the *Central Supply Catalogue* have either a single entry at an optimal Tech Level or listings of gradations. In some instances, these items may be available in a locally-developed prototype form as much as two Tech Levels prior to their introduction. These prototypes may be either reverse-engineered lower-tech versions of an item or be experimental versions of local design. Such prototypes will generally be subject to restrictions on the Availability table and an additional DM-2 for prototypes or a DM-4 for early prototypes. Depending on the world and local conditions as determined by the Referee, prototech items may not be available at all or they may need to be created from local materials by the Traveller at considerable cost and effort.

Conversely, electronics and computers may be available at higher Tech Levels for considerably less cost and mass than their optimal Tech Level, for instance a Computer/1 device may be very cheap and of negligible size on a TL14 world where a Computer/5 device is available.

PROTOTECH

A prototype device uses lower tech, substitute or other prototype components to build an item normally constructed at up to two Tech Levels greater technology. These devices are non-standard, larger, more expensive and often less reliable than their standard counterparts.

All tasks using prototech devices are subject to the Skill DM penalty noted in the Prototech Features table. Early prototypes are especially tricky and require specific knowledge in the operation of the machinery. Individuals cannot avoid a DM-3 penalty for lack of skill by relying on that benefit from cascade skill effects. For instance, a telegraph operator on a TL3 world with Electronics (comms) skill or Electronics-0 who attempts to operate a city block-sized early prototype Computer/0 mainframe suffers both the DM-2 and the DM-3 for unskilled task attempts. A sensor operator from a more advanced world with Electronics (sensors) skill or Electronics-0 would suffer the same cumulative DM-5. However, any individual with actual Electronics (computers) skill of 1 or more would only be subject to the early prototype DM-2 penalty.

Prototech comes from two sources: reverse engineering and experimentation. A reverse engineered item has the advantage of known intended functionality and at least some recovered parts or diagrams. An experimental model is the result of someone venturing into uncharted waters and, as a result, experimental devices are subject to one additional Quirk.

Early prototypes are inherently unreliable. For every skill check or after every 24 hours of operation, a straight 2D check with a result of 2 or less indicates the item has failed and requires repair. This can have varying effect, a failed early prototype autochef might not be able to make dinner but a failed early prototype grav belt or life support system will require immediate attention. The complexity and time requirements, plus any possible additional parts to repair the item, are at the discretion of the Referee.

All prototypes have at least one quirk. These can be rolled on Prototech Quirks table or assigned by the Referee.

RETROTECH

Advancing technology can render some items less expensive or sizeable. Additional capabilities are reflected in more advanced versions through gradation or replacement but some items maintain abilities in smaller and/or cheaper versions.

Retrotech applies only to computers and electronic devices. Other items, even without additional features, are addressed through gradations and/or superseding higher tech items. At each Tech Level above the listed optimal Tech Level, computers and electronic devices are available at half the cost and mass of the basic model. This reduction is unlimited for computers but limited to three Tech Levels for electronic equipment. Reductions are even more drastic for some portable computers – see page 67. Items below 0.25 kilograms are considered to have negligible mass. Note the retrotech item is considered to have been produced at its actual Tech Level; a TL15 Computer/1 will be cheap and tiny but will require TL15 parts for repair.

Prototech Features

Item	TL	Mass	Cost	Skill DM	Disadvantages
Early Prototype	-2	x2 (x100)*	x10 (x100)*	-2	Unreliable, 2+ Quirks
Prototype	-1	x1 (x10)*	x5 (x10)*	-1	1+ Quirk

*Computers and electronics are especially sensitive to Tech Level development. Early prototype computers and electronics have mass and cost multiplied by 100 and prototypes have mass and cost multiplied by 10.

Prototech Quirks

1D	Quirk
1	Unreliable after prolonged use: After any skill check resulting in 2, or a result of 2 or less on 2D after every 24 hours of use, the item becomes unreliable until ‘cooled down’ or repaired. If already unreliable, apply DM-1 to task checks and halve any time interval between periodic failure checks.
2	Especially massive: Double the item’s mass.
3	Especially expensive: Double the item’s cost.
4	Especially difficult to operate or repair: Skill checks suffer an additional DM-1.
5	Item is ‘noisy’: The item is either very noticeable with DM+2 on Recon or sensor checks to detect, or its operation causes discomfort to the operator and others nearby because of noise, smell or visual effects, causing DM-2 to task checks from all nearby personnel without appropriate sensory protection.
6	Item is not durable: After one year, the item becomes permanently unreliable. If already unreliable, subtract a further DM-1 to task checks and halve any time interval between failures.

ARMOUR

Armour is designed to prevent the Traveller from coming to harm but there are a multitude of threats present in the galaxy. Some are relatively passive, such as poisonous atmospheres, intense cold, radiation or the vacuum of space. Then there is the need to ward off bullets, energy beams and blades. Many types of armour combine these functions; for example, combat armour can resist most environmental hazards as well as weapons fire.

Unless otherwise noted, only one type of armour can be worn at a time but there are exceptions. Resolve damage from the outside in – damage that gets through the outer layer of armour is next applied to the inner layer.

The mass of armour is distributed around the body when worn properly, thus reducing its effective weight. A Traveller can reduce the mass of armour worn by 75% to determine encumbrance.

Most armour covers the torso and vital organs, usually with separate head protection. Limbs are less likely to be hit and are harder to protect. However, some armour includes either separate limb protection or full-body coverage.

Some armour has a required skill. A wearer suffers DM-1 to all checks taken in the armour per missing skill level. For example, a wearer with Vacc Suit 0 who is in a suit that requires Vacc Suit 2 would have DM-2 to all their checks. Not having the skill at all inflicts the usual DM-3 unskilled penalty instead (not in addition).

Radiation is a very present danger to many Travellers, whether in combat or exploration. Some armour provides a measure of defence against radiation as noted in the rad column of the armour table. This is deducted from the rads a Traveller receives every time they are exposed to radiation or every hour of constant exposure to sources such as reactor leaks or solar flares.

STANDARD ARMOUR

Standard armour offers all-round defence against most attacks, including guns, blades and fists, and can be found on most worlds of sufficient Tech Level, although Law Level may restrict its availability. Unless specifically stated, a Traveller can only wear one layer of standard armour at once.

Ballistic Vest: A flexible and relatively light flak jacket intended to be worn semi-discreetly. It is still fairly obviously armour but can be concealed under a light jacket, whereas a flak jacket is much more blatant.

Ceramic Carapace: Made from specially contoured plates of advanced ceramic/metal alloys positioned over the vital organs of the wearer, keeping them well protected. Ceramic alloys are designed to slough off heat and flame, giving the armour a much higher rate of protection against lasers, flamethrowers and other heat/fire-based attacks.

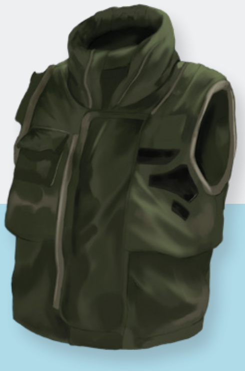
Cloth: A heavy-duty coverall tailored from ballistic cloth, sometimes containing light metal or ceramic plates at critical points. The fabric absorbs impact energy, distributing the blow over the body of the target and usually resulting in bruising. Cloth armour can be concealed under clothing but is fairly easy to spot – a Routine (6+) Investigate or Recon check is all that is required to spot the armour. At TL10 this armour is lighter and more flexible and can be indistinguishable from ordinary clothing under normal circumstances.

Cloth Jacket: A thick jacket of ballistic cloth covering the torso and arms. A cloth jacket resembles a thick ‘bomber jacket’ and is often customised to appear as a heavy work jacket when worn by ship’s crews and workers in potentially hazardous environments. A cloth jacket can be worn over anti-energy armour or any standard armour of one kilogram or less in mass but no other armour can be worn over it. Wearing a cloth jacket in warm climates is both uncomfortable and rather suspicious. A cloth jacket requires a Difficult (10+) Investigate or Recon check to identify as armour, Average (8+) if worn in warm weather.

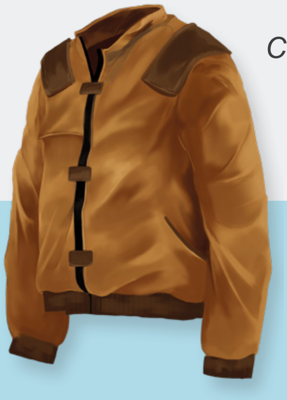
Cloth Trench Coat: A heavy ankle-length overcoat tailored from ballistic cloth, this trench coat can be worn outside one other layer of standard, archaic or anti-energy armour but no other armour can be worn over it. Much like a protec suit, it superficially resembles clothing but is obviously armour and can make the Traveller appear menacing or draw the attention of authorities.

ARMOUR TYPE	PROTECTION	TL	RAD	KG	COST	REQUIRED SKILL
Ballistic Vest	+4	8	—	1	Cr500	None
Ceramic Carapace	+10 (+16 vs. lasers, flame throwers, and other heat/fire-based attacks)	12	—	4	Cr12000	None
Cloth	+5	7	—	7	Cr250	None
	+8	10	—	3	Cr500	None
Cloth Jacket	+5	10	—	2	Cr500	None
Cloth Trench Coat	+6	10	—	4	Cr500	None
Diplo Vest	+3	10	—	—	Cr250	None
Flak Jacket	+3	7	—	8	Cr100	None
	+5	8	—	6	Cr300	None
Flak Shell	+8	9	—	8	Cr1000	None
Hunter Field Garb	+4	12	—	3	Cr10000	None
Jack	+1	1	—	2	Cr50	None
Mesh	+2	6	—	3	Cr150	None
Personal Energy Shield	+12 (+0 vs. lasers)	15	—	1*	Cr320000	None
Poly Carapace	+10	10	—	4	Cr10000	None
Lightweight Poly Carapace	+12	11	—	2	Cr15000	None
Advanced Poly Carapace	+16	13	—	2	Cr35000	None
Post-Apocalyptic	+4	6	—	3	Cr150	None
Protec Suit	+4	9	—	1	Cr500	None
Tactical Riot Armour	+4	7	—	6	Cr600	None

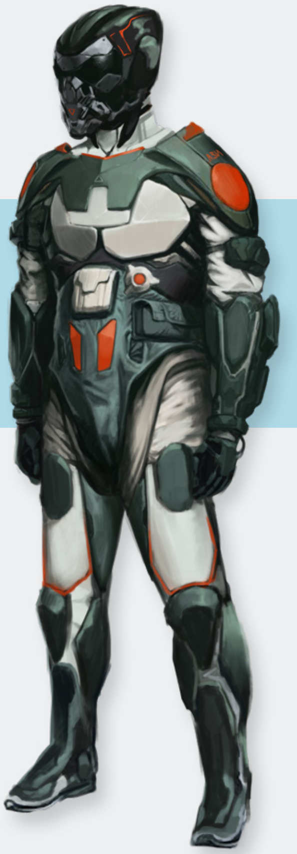
*The mass of the personal energy shield is that of the battery



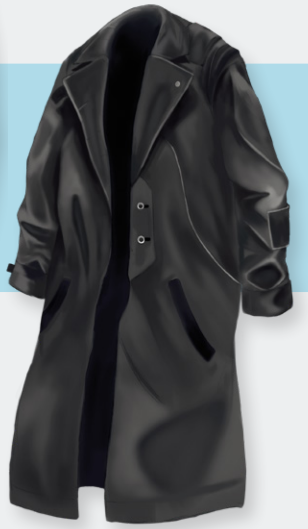
Ballistic Vest



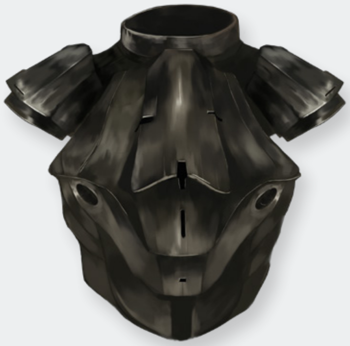
Cloth Jacket



Cloth Armour



Cloth Trench Coat



Ceramic carapace

Diplo Vest: Essentially a shirt-only version of the protec suit, the diplo vest can be worn under a normal shirt. The advantage is that while a protec suit is easily spotted, a diplo vest is completely concealed. It is ideal for sensitive occasions where armour is not appropriate, hence the term 'diplo' (diplomatic) vest.

Flak Jacket: A heavy sleeveless jacket of ballistic cloth, often with ceramic or metal inserts to stop powerful projectiles. Generally covering only the torso and groin, a flak jacket can be concealed under a bulky coat but will be spotted by all but the most cursory of glances.

Flak Shell: A heavy back-and-breastplate formed from metal or ceramic composites. A flak shell is essentially a stronger and more advanced flak jacket but is extremely heavy and imposes DM-1 on all checks that involve physical activity but there is no penalty to close combat attacks.

Hunter Field Garb: In addition to providing light protection, hunter field garb regulates the wearer's body temperature, neutralising the effects of extreme heat or cold to +/- 50°C. It also provides superior camouflage, adding DM+2 to Stealth checks and it has lots of pockets.

Jack: A jacket or body suit of tough natural or synthetic material such as leather, pseudohide or something similar covering the torso and arms. Jack may be armour or simply a tough piece of clothing. It is somewhat better than ordinary clothing or bare skin when defending against blades but fairly useless against high velocity attacks. The leather or hide armour of low-tech troops is usually equivalent to jack.

Mesh: A jacket or body suit made of natural or synthetic leather reinforced with a lining of flexible metal mesh. It is primarily useful against hand weapons.

Protec Suit: A slim-fitting business suit woven from protective fibres, the protec suit is obviously armour but also confers a degree of respectability without making the Traveller appear like a thug. It is capable of turning melee weapons while softening the blow of small arms fire.

Personal Energy Shield: There are times when armour is needed but the appearance of having armour is not. Nobles visiting hostile territory, military officers inspecting undisciplined militia, diplomats making first contact and others may require defensive armour without looking as if they are geared up for combat. The personal energy shield creates an invisible gravitic field around the wearer, which repels ballistic and all energy attacks except lasers. The shield is powered by a small, unobtrusive battery that may be worn at the belt or beneath the clothing in order to conceal its presence. A standard battery provides six hours of protection.

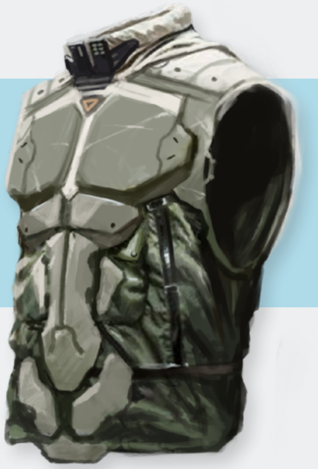
A skilled wearer can overload the battery to get more Protection by making a Difficult (10+) Electronics (computers) check to recalibrate the device. Success with Effect 0–3 provides Protection +18 but reduces the battery life by one half. Effect 4–5 provides Protection +24 with one half the battery life. Effect 6+ provides Protection +24 with no reduction in battery life. The Traveller must reattempt the calibration with each recharge of the battery.

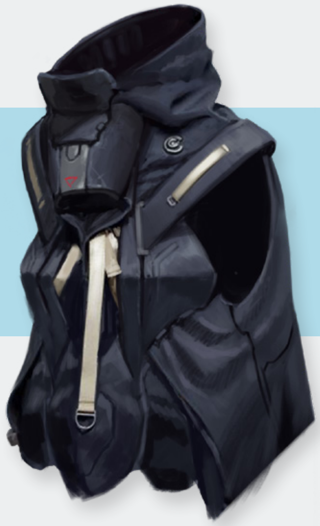
Poly Carapace: A bodysuit of fibrous material with attached plates of polymer plastics designed to shield major arteries and organs, the carapace comes complete with an armoured facemask and half-helmet. It is good protection against all forms of weapons but can be restrictive to limb movement. Poly carapace armour imposes DM-1 on all checks that involve physical activity but there is no penalty to close combat attacks. At TL11 and above more advanced lightweight versions are also available that are less bulky, do not restrict movement and provide better protection.

Post-Apocalyptic: This is scavenged armour cobbled together from plate pieces, salvaged rubber and other toughened materials that can be riveted, welded or glued together. It covers the torso, upper legs and maybe an arm.

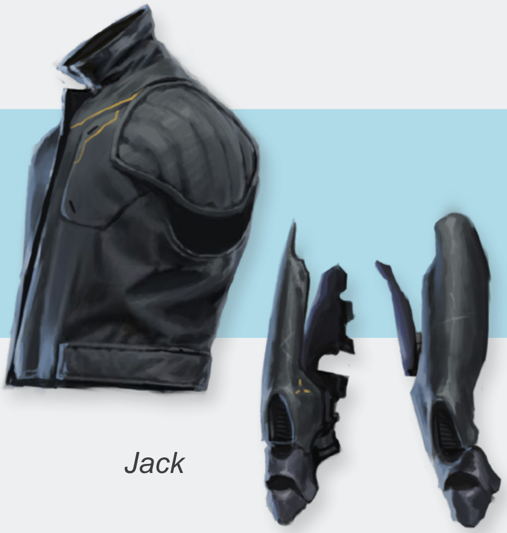
Tactical Riot Armour: Developed for law enforcement agencies, tactical riot armour protects the torso, arms and head of the wearer primarily from improvised weapons used by rebellious civilians. The design of this armour emphasises intimidation while rendering the wearer anonymous among others so equipped. The wearer gains DM+2 to all Persuade checks made to intimidate.

Flak Jacket

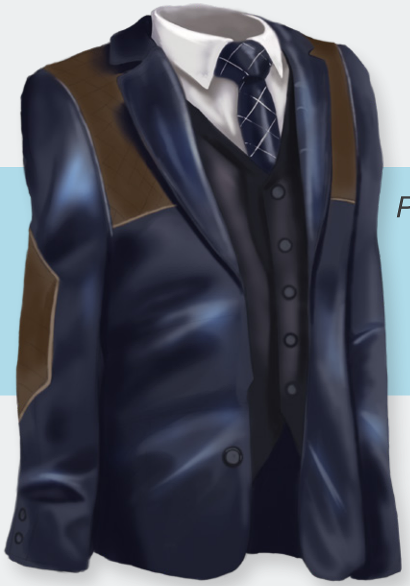




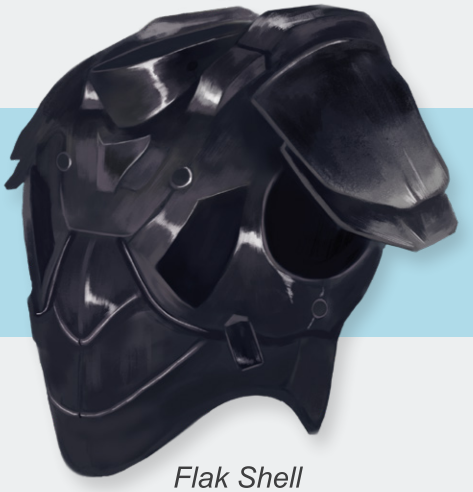
Mesh



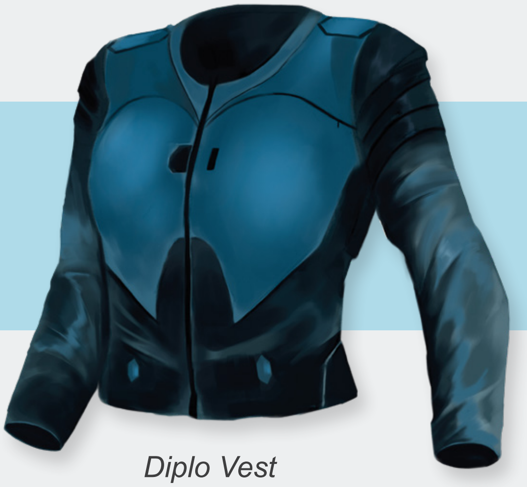
Jack



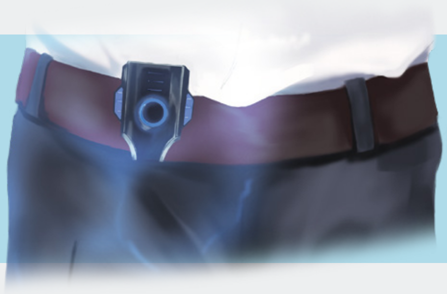
Protec Suit



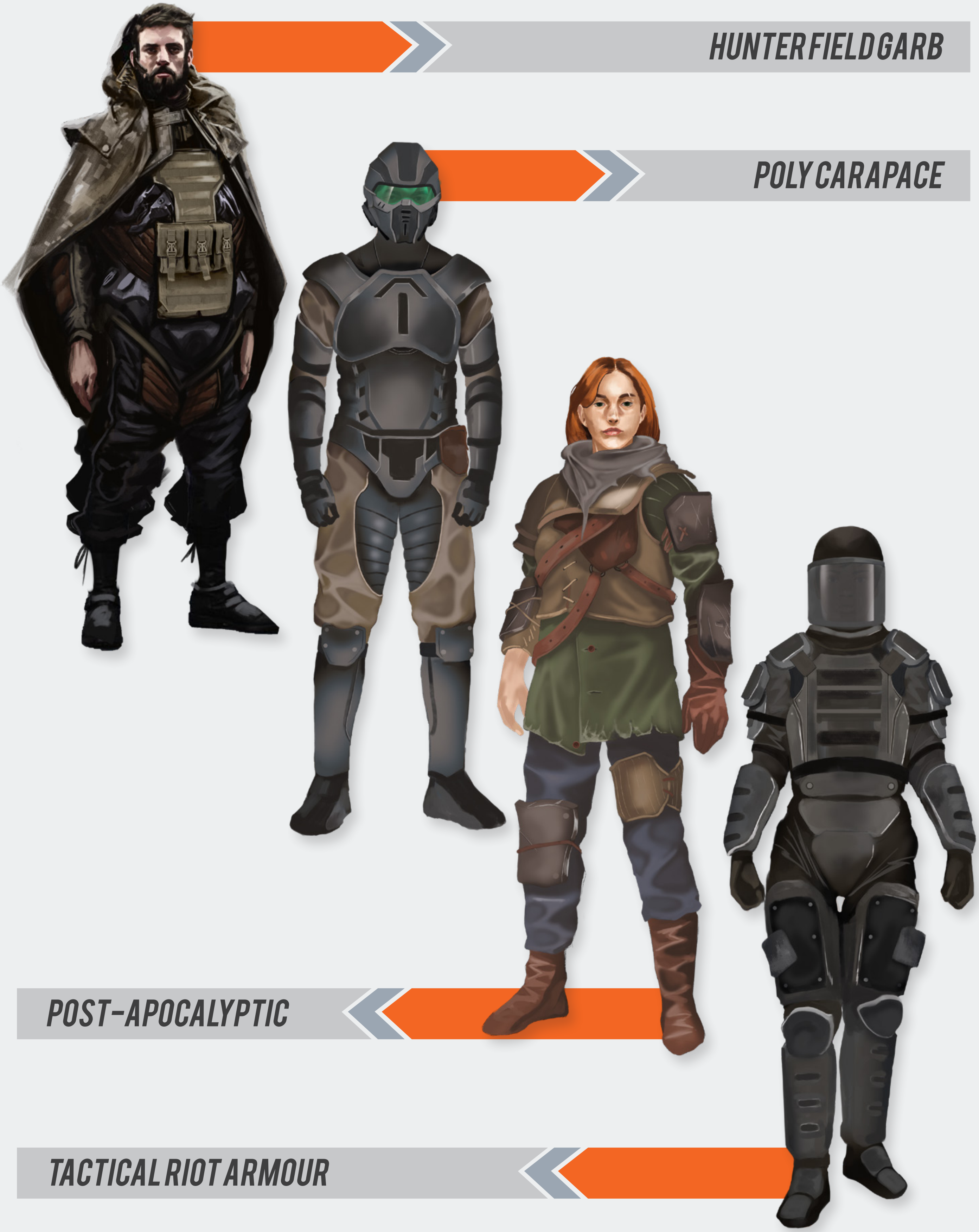
Flak Shell



Diplo Vest



Personal Energy Shield



HUNTER FIELD GARB

POLY CARAPACE

POST-APOCALYPTIC

TACTICAL RIOT ARMOUR

ARCHAIC ARMOUR

Occasionally Travellers may encounter enemies encased in primitive body armour or may be forced into a position to purchase and use it themselves. While inefficient, it can be effective against melee weapons and some weak firearms.

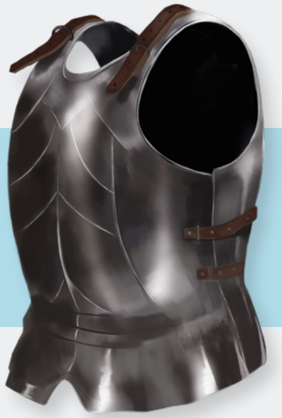
Against ranged weapons of a higher Tech Level, all armour in this section halves its Protection (rounding up). Unless specifically stated, only one layer of archaic armour can be worn at once.

Breastplate: A metal breastplate covers the front and back of the torso, offering decent protection against hand weapons and archaic projectiles.

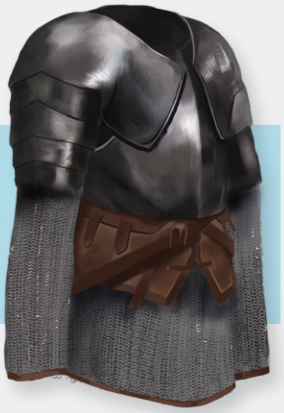
Full Plate: A complete suit of armour comprising shaped and fitted metal plates, riveted and interlocked to cover the entire body. It includes gauntlets, heavy leather boots and a helmet. Plate is designed to distribute its weight over the body, so hampers movement less than might be expected. However, it is heavy and tiring to wear and the sheer mass of metal that has to be moved imposes DM-2 on all checks involving physical activity, although there is no penalty to close combat attacks.

Half-Plate: Favoured by heavy cavalry even after infantry have dispensed with meaningful armour themselves, half-plate consists of articulated plates backed by light mail and padding.

Mail Hauberk: A knee-length coat of interlocking large or small metal rings set on a leather backing, a hauberk offers excellent protection against hand weapons and is used mainly by heavy infantry and cavalry. Scale mail (constructed with small plates rather than rings) offers similar protection and is a variation of the mail hauberk.

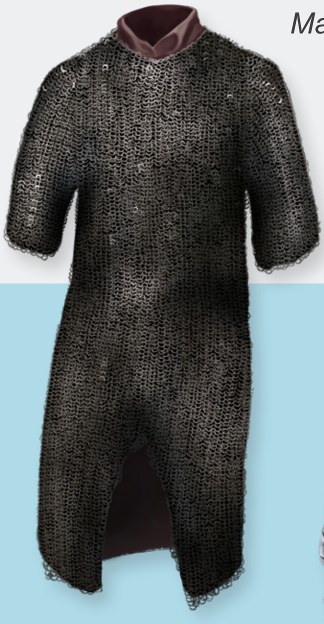


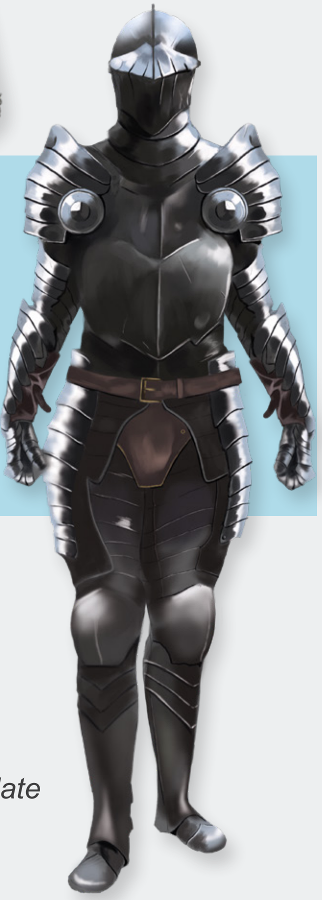
Breastplate



Half-Plate

Mail Hauberk





Full Plate

ARMOUR TYPE	PROTECTION	TL	RAD	KG	COST	REQUIRED SKILL
Breastplate	+3	1	—	5	Cr200	None
Full Plate	+6	2	—	20	Cr1000	None
Half-Plate	+5	2	—	12	Cr800	None
Mail Hauberk	+4	1	—	8	Cr500	None

ANTI-ENERGY ARMOUR

Lasers and energy weapons require a special type of protection not always afforded by other armour. The armour showcased here has little value against conventional weapons such as firearms but offers significant protection against lasers, flamethrowers and 'energy' weapons such as plasma rifles.

Importantly, unless otherwise stated, all armour in this section can be worn over the top of standard or archaic armour. However, only one type of anti-energy armour can be worn in this way. Anti-energy armour cannot be worn on top of protective suits, powered armour or battle dress, although modifications to such suits may provide similar protection.

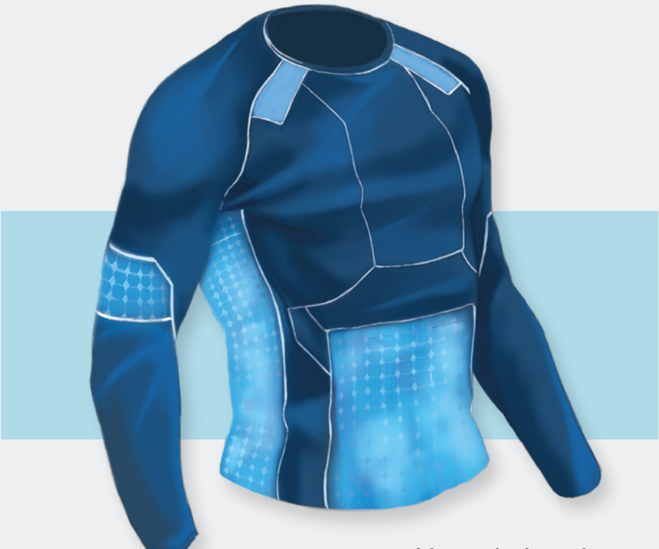
Ablat: Ablat is a cheap alternative to reflec, fashioned from a material which will ablate (vaporise) when hit by laser fire or other energy weapons. The ablation of the material carries away the energy of the laser and protects the wearer. Continued fire against ablat degrades its effectiveness but the armour is cheap and easily replaceable. Ablat also has a minimal value against other forms of attack but it cannot be combined with any other types of armour. Each laser hit on ablat armour reduces its Protection score against lasers by one.

Conduit-Bleed: Designed specifically to supercool plasma energy, this dense suit of polymer-alloy mixtures is well suited to blunt the impact of most blows. The advances made to these materials means directed plasma energy is far less likely to harm the wearer. While conduit-bleed can be worn over standard armour, such bulky suit layering imposes DM-1 on all checks that involve physical activity, including close combat attacks.

Dispersion: A semi-metallic polymer that wraps the wearer in advanced energy-dispersion materials. This protective suit is not quite as physically protective as anti-ballistic cloth but is built to absorb and eliminate most wavelengths of energy that strikes it.

Fireproof Suit: A fireproof suit is a complete body suit of light flexible material designed to resist heat and shed burning chemicals. It resembles the suits worn by racing drivers under their coveralls. It has no value against any weapons other than lasers, energy weapons and fire.

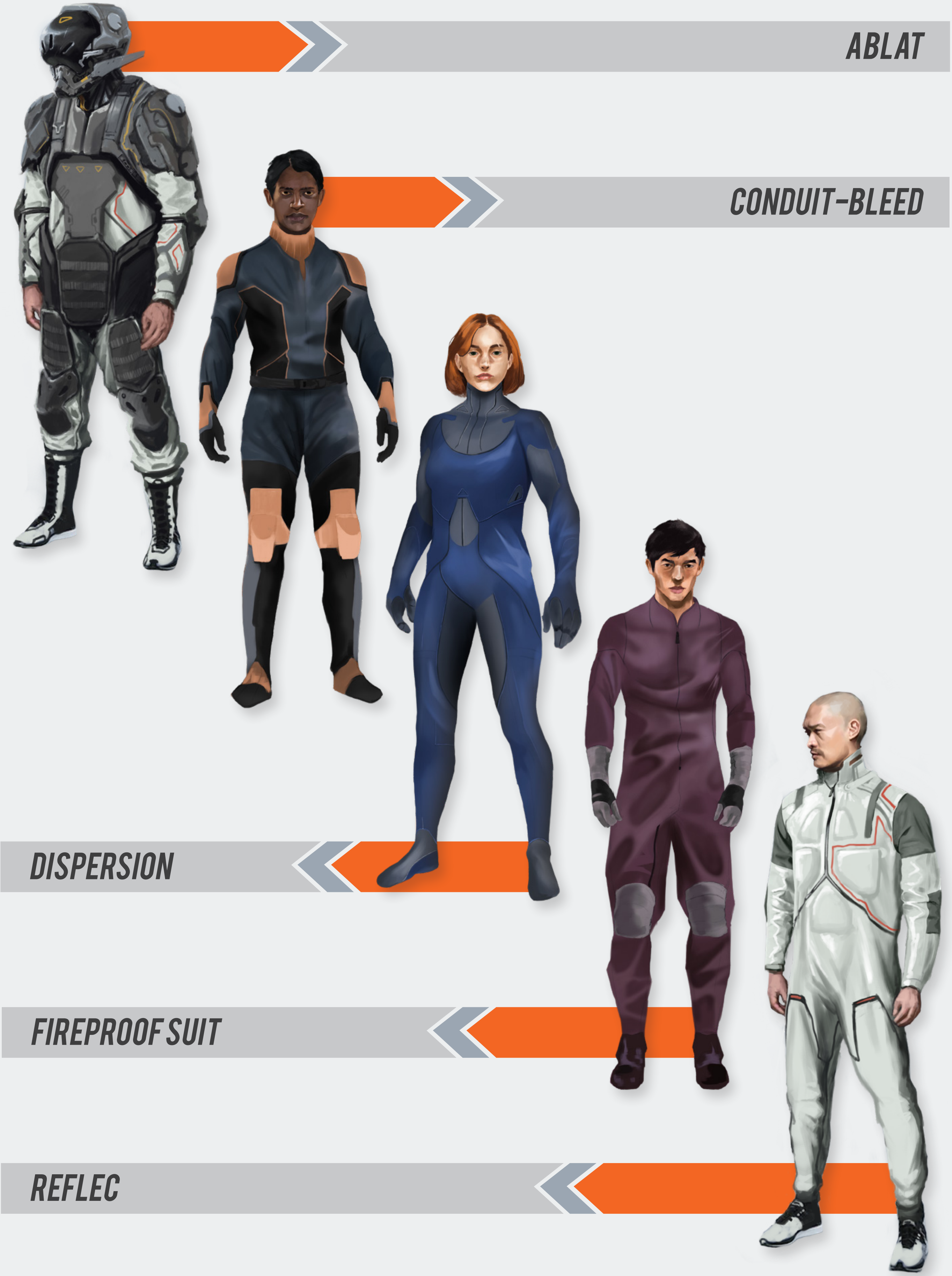
Neural Sheath: Cloth weaved with thin-spun chains of advanced neural crystals, this protective suit is worthless against physical damage but immensely useful against blocking energies created and manipulated by psions. The neural sheath is extremely thin and lightweight, and can be worn beneath any other form of armour or clothing. Any form of damage originating from neural or psionic powers, weaponry or attack is affected by a neural sheath.



Neural sheath

Reflec: Reflective material on a plastic base can be tailored into a body suit which is ineffective against most weapons but superior in defence against laser fire. Reflec is expensive and often difficult to obtain, imposing DM-2 on any Stealth checks the wearer attempts.

ARMOUR TYPE	PROTECTION	TL	RAD	KG	COST	REQUIRED SKILL
Ablat	+1 (+6 vs. lasers)	9	—	2	Cr75	None
Conduit-Bleed	+4 (+15 vs. plasma)	14	—	8	Cr3500	None
Dispersion	+2 (+10 vs. fire, lasers and energy)	12	50	3	Cr2000	None
Fireproof Suit	+0 (+4 vs. fire, lasers and energy)	7	—	1	Cr50	None
Neural Sheath	+0 (+20 vs. psionics)	17	—	2	Cr80000	None
Reflec	+0 (+10 vs. lasers)	10	—	1	Cr1500	None


ABLAT
CONDUIT-BLEED
DISPERSION
FIREPROOF SUIT
REFLEC

GENERAL MODIFICATIONS

Various other items can be used in conjunction with armour. Unless noted otherwise, these modifications can be applied to all armour types, from archaic to battle dress, although the latter has additional alterations available. These general modifications can also be applied to other equipment or suits, such as survival gear, or applied to clothing, or even a sheet or other covering draped over whatever is to be protected or hidden from view.

ADDITIONAL PADDING

Layering furs, cotton and/or hides onto existing armour will somewhat hinder movement but provide better protection from physical attacks. A person wearing additional padding suffers DM-1 to all checks involving DEX, including attacks, but adds +1 to their Protection. Padding can also be used in place of armour, providing Protection +1 without the DEX penalty, making it little more than an improvised heavier version of Jack.

Modification	TL	Effect	Kg	Cost
Additional Padding	1	Protection +1, DM-1 to DEX checks	5	Cr50

AUTO HELMET

Usable with any full suit of armour or protective equipment, this modification allows the collapse of the suit's helmet into a thick neck collar. Upon verbal or electronic command, or if sensing hostile environmental conditions, the helmet will automatically deploy, telescoping around the wearer's head within a second. This helmet replaces that normally associated with the armour and will include all features of the armour or other modifications. An auto helmet must be installed at time of purchase or retrofitted by a skilled armourer at double the purchase cost.

Modification	TL	Effect	Kg	Cost
Auto Helmet	12	Automatically deploys helmet	—	Cr10000

AUTOMEDIKIT

An internal medical scanner and drug injector, the automedikit can be installed in any full suit. It automatically applies First Aid if the wearer is reduced to END 0 (treat the automedikit as having Medic skill equal to the DM provided by a medikit of the same Tech Level). It can also administer fast drug (Hibernation) on command or if life support systems are failing. The TL11 version can also inject combat drugs and metabolic accelerators on command (usually by the wearer's voice command, although some military units allow remote activation). The kit contains standard supplies common to a medikit of the same Tech Level and one dose of Fast Drug; other drugs must be purchased separately.

Automedikit	TL	Effect	Kg	Cost
Basic	10	Automatic First Aid and Fast Drug injector	—	Cr5000
Improved	11	+Drug injection on command	—	Cr7500
Enhanced	12	TL12 Medikit equivalent	—	Cr10000
Advanced	14	TL14 Medikit equivalent	—	Cr15000

AUTO PROTECT KIT

Similar to the auto helmet but more all-encompassing, the auto protect kit automatically deploys a helmet, gloves and boots from rings at the neck, wrists and ankles of a protective suit. An auto protect kit is only available for full protective suits. The kit replaces the helmet, gloves and boots of the suit with versions that deploy within a second on verbal or electronic command or in response to hostile environmental conditions. Springs in the boot extraction mechanism will cause the wearer to involuntarily hop from leg-to-leg if standing when the boots deploy and any item held will be dropped when the gloves deploy. Each ring can be deployed separately if desired. An auto protect kit must be installed at time of purchase or retrofitted by a skilled armourer at double the purchase cost.

Modification	TL	Effect	Kg	Cost
Auto Protect Kit	12	Automatically deploys helmet, gloves and boots	—	Cr20000

BODY CAMERA

While most protective suits include a helmet-mounted camera to record or transmit video images, some do not. When added to armour or clothing, the camera is activated by a manual switch or voice command. Body cameras store 72 hours of footage at TL8 and effectively unlimited amounts at TL10 and greater.

Modification	TL	Effect	Kg	Cost
Body Camera	8	2D video recorder and transmitter	—	Cr50
Body Camera	10	+Unlimited storage	—	Cr150

CAMOUFLAGE, BASIC

Using natural or artificial material to break up distinctive outlines of a person or equipment, camouflage makes it more difficult to detect the wearer. Camouflage suitable to its environment grants DM+2 to all Stealth checks made against visual searches, such as an opposed Recon check. Partially suitable camouflage patterns, such as a woodland pattern in an urban or desert environment, are only half as effective and totally unsuitable patterns, such as a green-brown pattern in a jungle of pink and purple foliage, are totally ineffective. Basic camouflage can be defeated by infrared and other detection systems operating beyond the visual spectrum and is ineffective at ranges of less than 100 metres unless the wearer remains stationary.

Modification	TL	Effect	Kg	Cost
Camouflage, Basic	3	DM+2 to suitable Stealth checks beyond 100m	—	Cr25

CAMOUFLAGE, HEAVY

A heavy coating of materials to simulate a particular environment, such as a ghillie suit, can provide DM+3 to Stealth checks to wearers or DM+4 if the wearer remains stationary. Heavy camouflage grants no DM to Stealth checks against infrared or thermal sensors.

Modification	TL	Effect	Kg	Cost
Camouflage, Heavy	3	DM+3 or +4 to suitable Stealth checks	3	Cr200

CHAMELEON, FULL MOTION

Full motion chameleon technology allows the surface of armour or clothing to transform into varying colours and patterns, in both static and full 2D motion modes. This grants the wearer DM+3 to all Stealth checks and can be effective for a quickly moving wearer at as close as 20 metres range. Full motion chameleon technology can also be used for non-stealth purposes; changing the colouration of clothing or turning the wearer into a live-action walking advertisement.

Modification	TL	Effect	Kg	Cost
Chameleon, Full Motion	12	DM+3 to suitable Stealth checks beyond 20m	—	Cr10000

CHAMELEON, IR

IR chameleon technology can be added to any full-body armour or suit. It selectively bleeds heat to match background infrared levels and effectively renders the wearer invisible to infrared detection (DM+4 to Stealth checks made against sensors). IR chameleon technology is compatible with camouflage or full motion chameleon technology.

Modification	TL	Effect	Kg	Cost
Chameleon, IR	12	DM+4 to Stealth checks vs infrared and thermal sensors	—	Cr5000

CHAMELEON, VISLIGHT

A more advanced form of chameleonic armour, this lines the surface of the full-body armour or suit with light-bending technology, making the wearer nearly invisible to visual or thermal sensors (DM+4 to Stealth checks). Vislight chameleon provides this bonus at any range to both stationary and moving wearers to within five metres.

Modification	TL	Effect	Kg	Cost
Chameleon, Vislight	13	DM+4 to Stealth checks beyond 5m	—	Cr50000

COMPUTER WEAVE

Computer weave can be added to any armour that does not already have a computer system and adds an integrated computer to that armour.

Computer Weave	TL	Effect	Kg	Cost
Basic	10	Computer/0	—	Cr500
Improved	11	Computer/1	—	Cr500
Enhanced	13	Computer/2	—	Cr600
Advanced	15	Computer/3	—	Cr1000

COOLANT RIG

Wearing heavy armour in a hot environment can make life extremely uncomfortable. This web of tubing filled with chemical coolant transforms a hot day on a volcanic planet or desert crossing into something far more tolerable. Armour or a full body suit fitted with a coolant rig allows the wearer to comfortably endure temperatures of up to 50°C without suffering damage (see page 82 of the *Traveller Core Rulebook*). Temperatures higher than this are reduced to the next lower level, up to 100°C, wherein the coolant rig becomes ineffective.

Modification	TL	Effect	Kg	Cost
Coolant Rig	8	Negates heat effects up to 50°C	2	Cr1000

ENVIRONMENT READER

This external colour-changing sensor is adhered somewhere the wearer can see it and shows the status of the surrounding atmosphere in brilliant hues; green for oxygen content, blue for methane, red for radiation and black for any of the airborne toxins the reader is designed to detect.

Modification	TL	Effect	Kg	Cost
Environment Reader	8	Simple colour-coded environment indicator	—	Cr100

EXTENDED LIFE SUPPORT

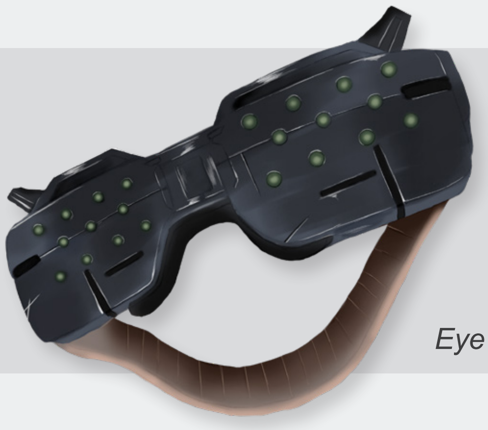
This modification can be added to any suit that provides life support (vacc suits, HEV suits and combat armour). Extended life support can also be applied to a standard life support system that has been added to sealed suits lacking such systems. By adding high-pressure oxygen tanks and improved recycling systems, the modified suit will provide 18 hours of life support. At TL12 this option can be added twice, increasing life support to 36 hours.

Modification	TL	Effect	Kg	Cost
Extended Life Support	10	Increases suit life support capability to 18 hours	—	Cr10000

EYE PROTECTION

A lot of armour includes visors or goggles to guard against flying debris but such protection becomes vital at TL9 to guard against the blinding effects of lasers. Eye protection can be added to any armour but is automatically included in armour that covers the head at TL9+.

Modification	TL	Effect	Kg	Cost
Eye Protection	6	Protects eyes against debris and laser blinding	—	Cr50



Eye Protection

FRIEND OR FOE HUD

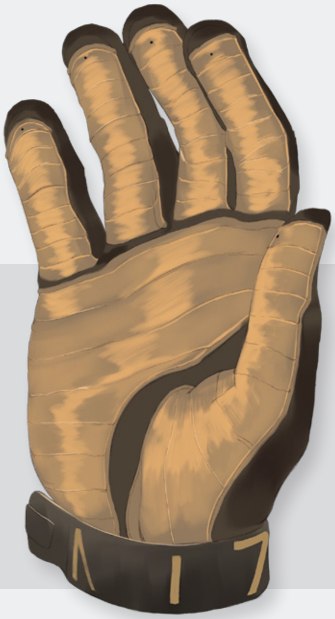
Several scanners and cameras implanted in the armour keep track of registered friendly transponders (the system is equipped with its own transponder) and marks targets without these as potential enemies. This information is displayed on a visor or helmet-based HUD (Heads-Up Display), allowing the user to know the exact location of allies and enemies within line of sight or up to a kilometre away, whichever is greater. As well as avoiding potential friendly fire incidents, this system grants DM+1 to any Tactics (military) checks. Extra transponders cost Cr100 for 20 units.

Modification	TL	Effect	Kg	Cost
Friend or Foe HUD	11	Identifies friendly transponders to line of sight or 1km, DM+1 to Tactics (military) checks	—	Cr4000

GECKO PADS

These attach to the user's boots, kneepads, elbow pads and gloves. Gecko pads utilise the Van der Waals force to selectively adhere to relatively smooth surfaces, including walls and ceilings. The pads allow the user to climb vertical surfaces and adhere to the walls and ceilings of almost any material in gravity environments ranging from 0 to 1.5G; movement is halved while traversing these surfaces. They also function as magnetic grippers when walking in zero-G.

Modification	TL	Effect	Kg	Cost
Gecko Pads	9	Selective adherence to surfaces in 0-1.5G	—	Cr5000



Gecko Pads

GRAV ASSIST

This modification adds an integral grav belt (see page 97) to a full environment suit or armour. Endurance is based on both the mass and speed of the object lifted. Although capable of 200 kilometres per hour maximum velocity, a cruising velocity of 100 kilometres per hour is assumed. Exceeding cruising speed reduces effective endurance by two to three and every minute over this speed counts as 1.5 minutes endurance. Every full 100 kilograms of suit mass will halve grav assist duration; for instance, wearing a 110 kilogram command battle dress suit will halve the duration from four to two hours; wearing a 220 kilogram logistics battle dress suits would halve it to one hour. A grav assist modification cannot lift more than 500 kilograms total mass, including the mass of the user and any other items carried.

Grav Assist	TL	Effect	Kg	Cost
Basic	12	Grav belt (Medium speed), 4 hours	4	Cr110000
Advanced	15	Grav belt (Medium speed), 12 hours	2	Cr120000

GYRO-STABILISER RIG

This modification adds a localised motion-pivot at the waist which counters the effects of weapons recoil. It takes an Average (8+) Mechanics (1D minutes, EDU) check to attach the rig's arm to a heavy weapon or rifle but this negates all penalties for Bulky weapons. The TL11 version removes all penalties for Very Bulky weapons as well. A version of this can be worn with a sturdy belt instead of applying it to armour.

Gyro-stabiliser Rig	TL	Effect	Kg	Cost
Basic	9	Removes penalty for Bulky weapons	2	Cr1000
Improved	11	Removes penalty for Very Bulky weapons	2	Cr5000

HANDS-FREE CUFF

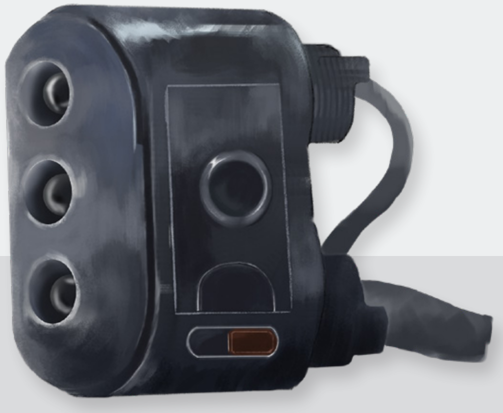
A hands-free cuff, also known as a tool cuff in civilian markets and a weapons cuff in military parlance, is a wrist-mounted rigid cuff which allows the installation of weapons or tools for hands-free use. The cuff will hold up to two pistol or knife sized weapons or tools weighing up to one kilogram each, one under and one over the hand. The mass of the hands-free cuff does not include the mass of the weapons. This is often used in concurrence with a laser sight or personal HUD (see page 176), without which ranged weapons suffer DM-1 to attack rolls. A wearer can have cuffs on both hands, potentially supporting up to four weapons but rules for multiple weapons attacks apply.

Modification	TL	Effect	Kg	Cost
Hands-Free Cuff	8	Holds up to two 1kg items	1	Cr500

HELMET LIGHTS

While most protective suits include lights mounted on the sides of the helmet and/or above the visor, some do not. When added to a helmet, lights are activated by a manual switch. At TL8 and above, voice-activated lights are available at double cost.

Modification	TL	Effect	Kg	Cost
Helmet Lights	6	Flashlight illumination in front of a user	—	Cr10
Helmet Lights (voice activated)	8	+Voice control	—	Cr20



Helmet Lights

LIFE SUPPORT BELT

Travellers will find it difficult to sit comfortably in most chairs wearing a full life support system. Many spacecraft crew seats contain hook-ups to vacc suits and other environmental protective armour to allow the ship to provide life support. Travellers can attach a full life support system to their suits with minimal effort in less than half a minute, a period during which reserves within the suit will sustain life. Most suits can only maintain life support for a few minutes without a life support system.

Standard life support is always an option but pressure sleeves and skin suits are thin enough to be worn as uniforms aboard ship. The life support belt is an alternative or temporary system thin enough to allow comfortable seating or to wear all day. The belt contains an oxygenated gel and a sophisticated rebreather system to allow full life support for a reasonable period of time. At TL10 the belt will sustain life for one hour, at TL12 it will support life for two hours and the TL15 version does no better but is considerably thinner and available in a bandolier-like form, giving the user the option of wearing two or three of these advanced belts.

Life Support Belt	TL	Effect	Kg	Cost
Basic	10	1 hour life support	2	Cr3000
Improved	12	2 hours life support	2	Cr4000
Advanced	15	2 hours life support, up to 3 wearable	1	Cr5000

LIFE SUPPORT SYSTEM

Some suits may be sealed to provide protection in a vacuum or hazardous environment but include no or limited life support capability, often allowing survival for just a few minutes or at most an hour. These suits can be equipped with an external life support system. This is a mask or helmet attachment depending upon the suit and is removable when not needed or while being replaced when depleted. The life support system does not provide additional protection against temperatures or radiation and is not designed to withstand corrosive or insidious atmospheres. This system provides six hours of life support, which may be extended by applying the extended life support modification. At higher Tech Levels, this unit becomes more compact. The advanced version can be configured in serial, allowing 12 hours of life support for a user wearing two systems. A life support system requires one hour to recharge from connectors available on spacecraft, stations and starports.

Life Support System	TL	Effect	Kg	Cost
Basic	8	6 hours life support	10	Cr6000
Improved	10	6 hours life support	6	Cr5000
Advanced	12	6 hours life support, up to 2 wearable	4	Cr8000

MAGNETIC GRAPPLES

These magnetic plates insert into boots to allow the user to walk normally on a spacecraft or other ferro-magnetic surface without artificial gravity. They will not allow the wearer to walk on walls or ceilings in normal gravity.

Modification	TL	Effect	Kg	Cost
Magnetic Grapples	8	Walk on metallic surfaces in microgravity	—	Cr100

MINEFIELD BOOTS

Used by troops in regions where there is a risk from anti-personnel mines and other booby traps hidden beneath the ground, these give complete protection against routine hazards such as snakes and grant Protection +4 against sharpened stakes and anti-personnel mines. They offer no additional protection against combat hazards unless the wearer is deliberately shot in the foot.

Modification	TL	Effect	Kg	Cost
Minefield Boots	8	Protection +4 vs. foot hazards	3	Cr250

NULL SHIELD

This expensive and rare modification is extremely advanced, coating the armour with substances similar to those found in anti-psion ammunition and chemical psi-sedatives. Armour and clothing properly coated with this substance will grant the wearer complete immunity to any psionic power but also prevents the wearer from using any psionic talent, including Awareness.

Modification	TL	Effect	Kg	Cost
Null Shield	17	Complete immunity from psionic powers	—	Cr150000

PERSONALISATION

The basic version of this uses hardened enamels and pigments to artistically alter armour or clothing to reflect the individuality of Travellers, the military they belong to or other affiliations. The improved version uses embedded fibres or emitters to display patterns or images on the surface of the armour; these can be altered at will, not at the speed of full motion video, but they act as basic camouflage configured for any environment. A more advanced version, allowing for full motion 2D images is equivalent to the full motion chameleon modification (see page 21).

Personalisation	TL	Effect	Kg	Cost
Basic	2	Custom image or logo	—	Cr10
Improved	10	Programmable custom image or basic camouflage	—	Cr1000

PSIONIC SHIELD HELMET

A psionic shield helmet can be built into armour or worn as a separate unit. It acts as a shield against psionic influences, blocking all telepathic powers.

Modification	TL	Effect	Kg	Cost
Psionic Shield Helmet	12	Blocks all telepathic powers	2	Cr4000

REFLEC COATING

A coating of reflec can be added to the surface of a piece of armour or suit. This modification imposes DM-2 on any Stealth checks the wearer attempts and negates any camouflage or chameleon options.

Modification	TL	Effect	Kg	Cost
Reflec Coating	10	+10 Protection vs. lasers, DM-2 to stealth checks, negates camouflage and chameleon	—	Cr2000

SELF-SEALING

Self-sealing systems can be added to any armour (except ablat) when manufactured. The armour can then seal breaches and repair minor damage. This cannot reconstruct a severely damaged suit but ensures a damaged vacc suit or torn jacket mends itself.

Modification	TL	Effect	Kg	Cost
Self-Sealing	11	Automatically mends damage and seals suit breaches	—	Cr2000

SMART FABRIC

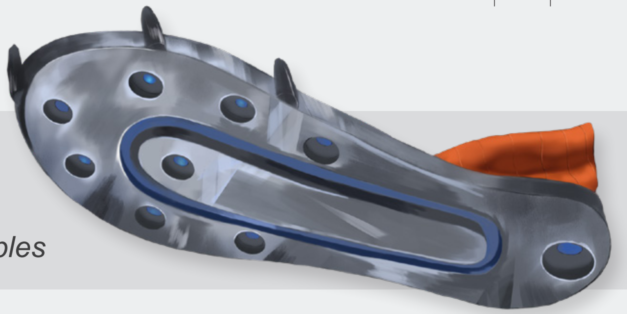
Smart fabric resists stains and dirt, cleaning itself automatically. Smart fabric armour or clothing automatically sloughs off dirt, dust and mud (although this can be suspended for the purposes of camouflage).

Modification	TL	Effect	Kg	Cost
Smart Fabric	10	Resists stains and dirt, automatic cleaning	—	Cr1000

SUBMARINE FUNCTIONALITY

Only available on sealed suits (such as vacc suits, combat armour and powered armour), this modification adds oxygenators, pressure valves, flow venting fins and small turbines to help propel the suit's wearer underwater (or within a similar fluid). This modification allows a suit to completely ignore any penalties for being submerged at depths up to the rated value under standard atmosphere and gravity for as long as it has life support. The cost for the modification is multiplied by the Protection value of the armour.

Submarine Functionality	TL	Effect	Kg	Cost
Basic	9	600 metre safe submersible depth	6	x Cr200
Improved	12	2,000 metre safe submersible depth	6	x Cr300
Advanced	15	4,000 metre safe submersible depth	6	x Cr500



Magnetic Grapples

TACTICAL VIDEO SUITE

More than just a remote camera monitor, the tactical video suite uses several small video cameras and microphones to monitor and record everything for real-time or later viewing. More advanced versions are reduced in size and increase the amount of data stored. When attached to a transceiver, these transmit to a central intelligence hub, allowing for real-time monitoring of the wearer and granting DM+1 to all Tactics (military) checks made by viewers.

Tactical Video Suite	TL	Effect	Kg	Cost
Basic	7	10 hours storage	2	Cr100
Improved	8	24 hours storage	1	Cr200
Advanced	10	72 hours storage	—	Cr500

THRUSTER PACK

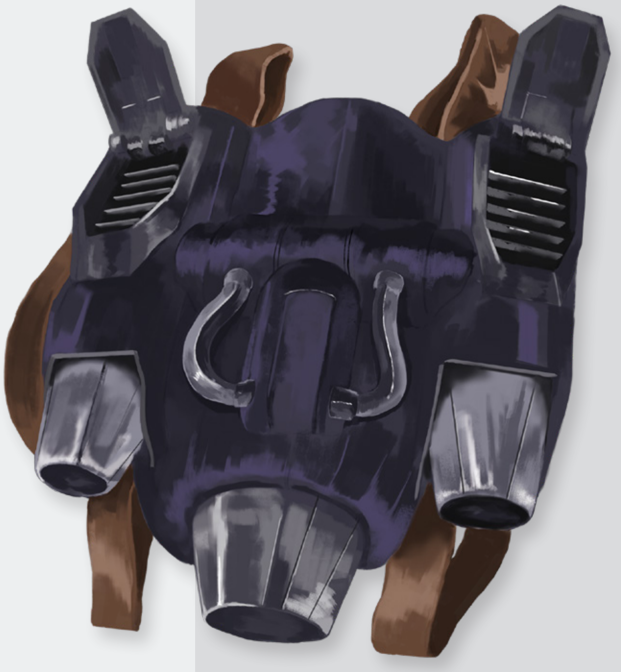
A basic thruster pack gives the Traveller the ability to manoeuvre in zero-gravity over short distances at an Idle speed. An Athletics (dexterity) check is required to use a thruster pack accurately. Basic thruster packs can only be used in microgravity environments. Improved thruster packs allow 0.1G acceleration for up to 48 hours, using standard starship fuel. The advanced pack uses grav-thruster plates but has the same performance profile as the improved version.

Thruster Pack	TL	Effect	Kg	Cost
Basic	7	Microgravity Idle speed movement	6	Cr2000
Improved	12	48 hours 0.1G acceleration – reaction drive	6	Cr14000
Advanced	14	48 hours 0.1G acceleration – grav-thruster plates	2	Cr20000

VACC SUIT ACCESSORY PACK

Available for tailored and light-duty vacc suits, the accessory pack contains a solid helmet and semi-rigid torso piece which provides additional armour protection (Protection +6 to suits with less inherent armour), although this is intended to protect against micrometeorites and some radiation. A belt that can be worn with or without the torso piece. Its pockets contain over-gloves and safety tethers, a battery-powered lamp with a one-hour power supply, plus two emergency disposable gas thruster units that allow a stranded spacefarer to return to their ship. The suit can be fed with power and air from an external source – a feed is normally found at all starship crew duty stations – or run off the belt's batteries and air supply. For extended operations, the manufacturer recommends the use of the torso unit, which contains an extended air supply.

Vacc Suit Accessory Pack	TL	Effect	Kg	Cost
Basic	9	+10 Rads, life support 1hr (belt), +4hr (torso)	10	Cr6000
Improved	12	+20 Rads, life support 1hr (belt), +6hr (torso)	4	Cr6000
Advanced	14	+25 Rads, life support 1hr (belt), +8hr (torso)	2	Cr8000



Thruster Pack

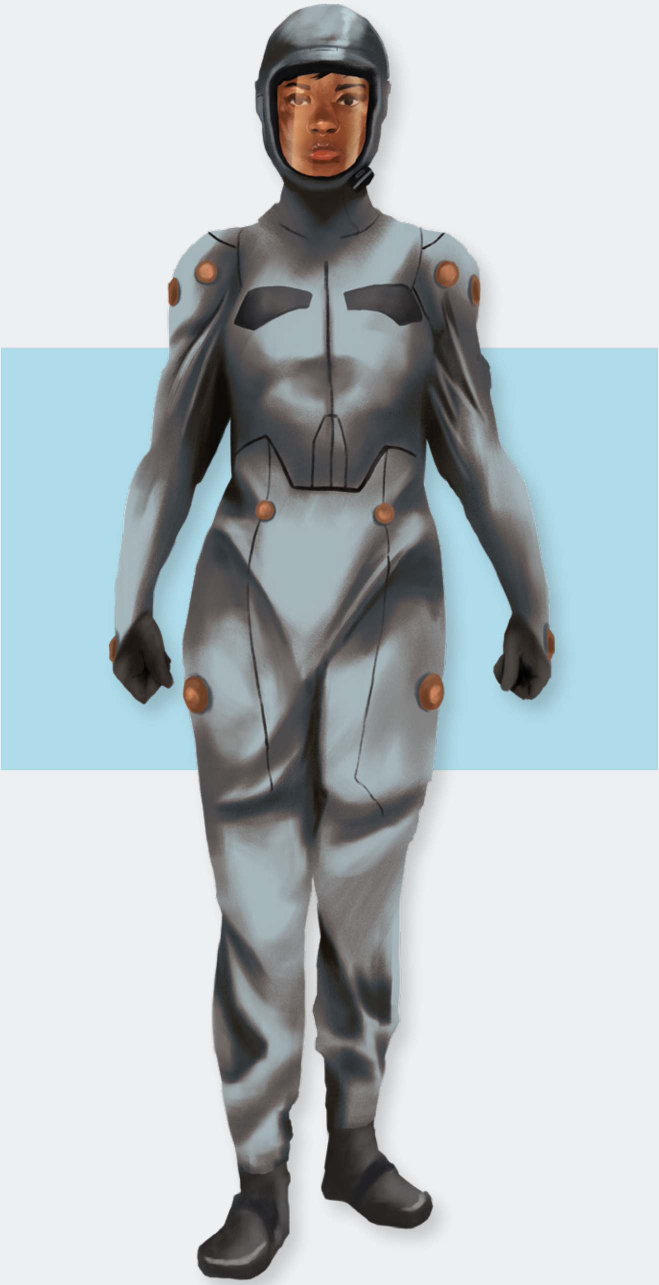
PROTECTIVE SUITS

Some armour comes as a complete suit and is worn with a helmet and additional gear such as air tanks. Suits, if sealed, offer total protection from gas and airborne biological or chemical agents. These suits can be divided into four types: civilian suits designed to protect the wearer from vacuum or hazardous environments, unpowered combat armour designed for protection against weaponry, powered civilian or more often military armour designed for heavy loads or severe conditions and battle dress, normally only available to licensed military operatives.

Protective suits cannot be combined with other armour, fitting tightly around the wearer and regulating temperature. On the inside, these suits often have connectors for medical sensors and waste disposal. Additionally, the outer surfaces are covered with sensors, equipment and radiative cooling coils. If Travellers desire greater protection, they should purchase a modified version or upgrade to a more protective suit.

ELECTRONICS SUITE

Unless otherwise stated, protective suits at TL8 and above come equipped with the following electronics suite appropriate to their Tech Level. All suites with a scope are assumed to have a helmet heads-up display (HUD) for all features of the suite. A protective suit built and purchased at a higher Tech Level than standard will contain an electronics suite suitable for its Tech Level of manufacture but only if it is the most advanced available version. For instance, a TL12 advanced vacc suit manufactured at TL13 will contain include a TL13 suite and cost the standard Cr20000 but an improved vacc suit (normally TL10 at Cr10000) manufactured and purchased on a TL13 world would have at best a TL11 electronics suite and cost Cr10000.



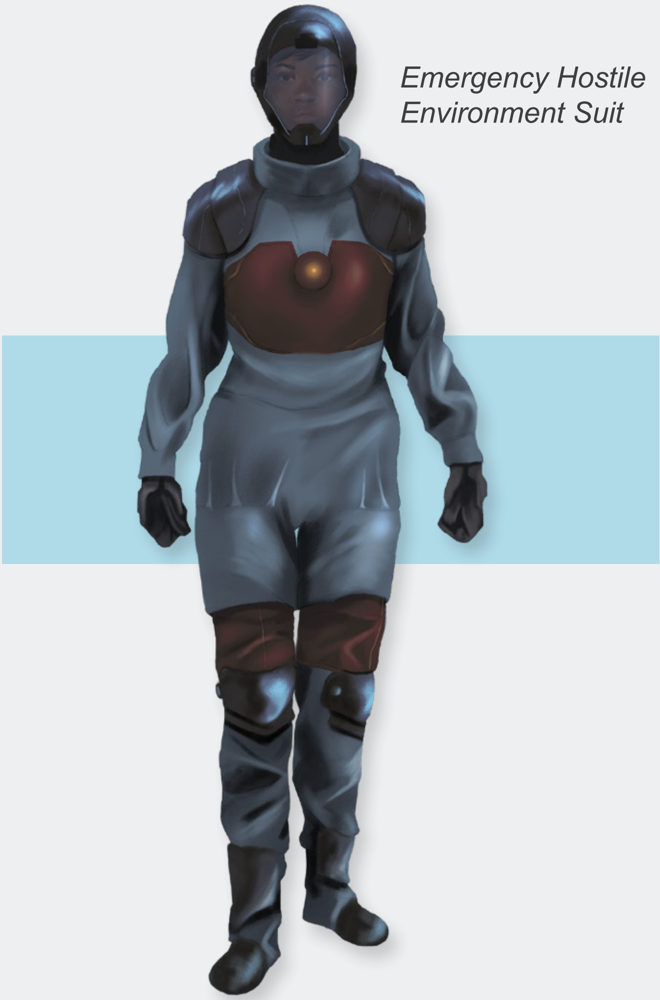
TL	Electronics Suite
All	Eye Protection, Geiger Counter, Body Camera, Helmet Lights
8	Radio Transceiver (50km)
9	Computer/0, Radio Transceiver (500km)
10	Computer/1, Binoculars, IR Goggles, Radio Transceiver (500km), Scope
11	Computer/1, Binoculars, IR Goggles, Radio Transceiver (500km), Scope
12	Computer/2, Binoculars, IR Goggles, Light Intensifier Goggles, Radio Transceiver (500km), Scope
13	Computer/2, PRIS Binoculars, Radio Transceiver (5,000km), Scope
14	Computer/2, PRIS Binoculars, Radio Transceiver (5,000km), Scope
15	Computer/3, PRIS Binoculars, Radio Transceiver (5,000km), Scope
16+	Bioscanner, Computer/4, PRIS Binoculars, Radio Transceiver (5,000 km), Scope

The scope feature of the Electronic Suite will apply as a Trait to any weapon held and fired by the wearer of the suit.

CIVILIAN SUITS

Civilian suits provide armour protection but their main function is to protect a Traveller from a hostile environment. In most instances, these suits do not require special permits or certifications to purchase, although the explosive ordinance disposal suit occupies a grey area between civilian and military use.

Emergency Hostile Environment Suit: A disposable emergency vacc suit is designed to protect the Traveller from corrosive, insidious and similarly hazardous atmospheres (and, of course, vacuum). The suit is good for six to eight hours in hazardous environments, after which there is a one in six (non-cumulative) chance it will fail every hour. Emergency suits are carried by starships to allow engineering crew to make emergency repairs under unusual conditions. The suit can be refurbished for Cr6000 but each refurbishment inflicts DM-1 to the chance of failure after the 'safe' time and reduces possible failure time by one hour. Once the failure chance has reached four in six, the suit is too degraded to be of use. An electronics suite is not included but there is an integral six-hour life support system.



Emergency Hostile Environment Suit

ARMOUR TYPE	PROTECTION	TL	RAD	KG	COST	REQUIRED SKILL
Emergency Hostile Environment Suit	+4	10	—	20	Cr9000	Vacc Suit 1
Emergency Softsuit	+0	10	—	10	Cr2000	Vacc Suit 0
Environment Suit, Basic	+0	8	0	1	Cr500	None
Environment Suit, Improved	+2	10	20	2	Cr500	None
Explosive Ordnance Disposal Suit	+12	8	—	35	Cr8000	None
HEV Suit, Basic	+8	9	75	40	Cr24000	Vacc Suit 1
HEV Suit, Improved	+9	10	90	30	Cr20000	Vacc Suit 1
HEV Suit, Enhanced	+12	11	140	30	Cr22000	Vacc Suit 0
HEV Suit, Advanced	+14	13	170	20	Cr40000	Vacc Suit 0
HEV Suit, Superior	+15	14	185	10	Cr60000	Vacc Suit 0
Pressure Sleeve	+0	10	—	—	Cr600	None
Rescue Suit	+12	12	120	22	Cr25000	Vacc Suit 1
Shipsuit, Standard	+4	14	60	2	Cr30000	None
Shipsuit, Deluxe	+6	14	75	4	Cr60000	None
Skinsuit	+4	14	20	1	Cr100000	None
Vacc Suit, Basic	+4	8	15	28	Cr12000	Vacc Suit 1
Vacc Suit, Improved	+8	10	60	12	Cr10000	Vacc Suit 0
Vacc Suit, Advanced	+10	12	90	8	Cr20000	Vacc Suit 0

Emergency Softsuit: A disposable emergency vacc suit including gloves and a soft, collapsible 'bubble' helmet, the softsuit offers no protection against hostile environments or attack – only vacuum and non-corrosive atmospheres. Starships are required to carry enough emergency suits or rescue bubbles to allow the crew and all passengers to survive depressurisation. Well-equipped ships include a softsuit at each crew position and a few spares at strategic points, in addition to crewmembers' own vacc suits.

The softsuit includes a small air bottle (four-hour capacity) and can be plugged into shipboard life-support points to prolong this supply. It is rather flimsy and offers no protection against radiation, making it a poor choice for repair work or routine duty and a desperate last resort for EVA work. An electronics suite is not included.

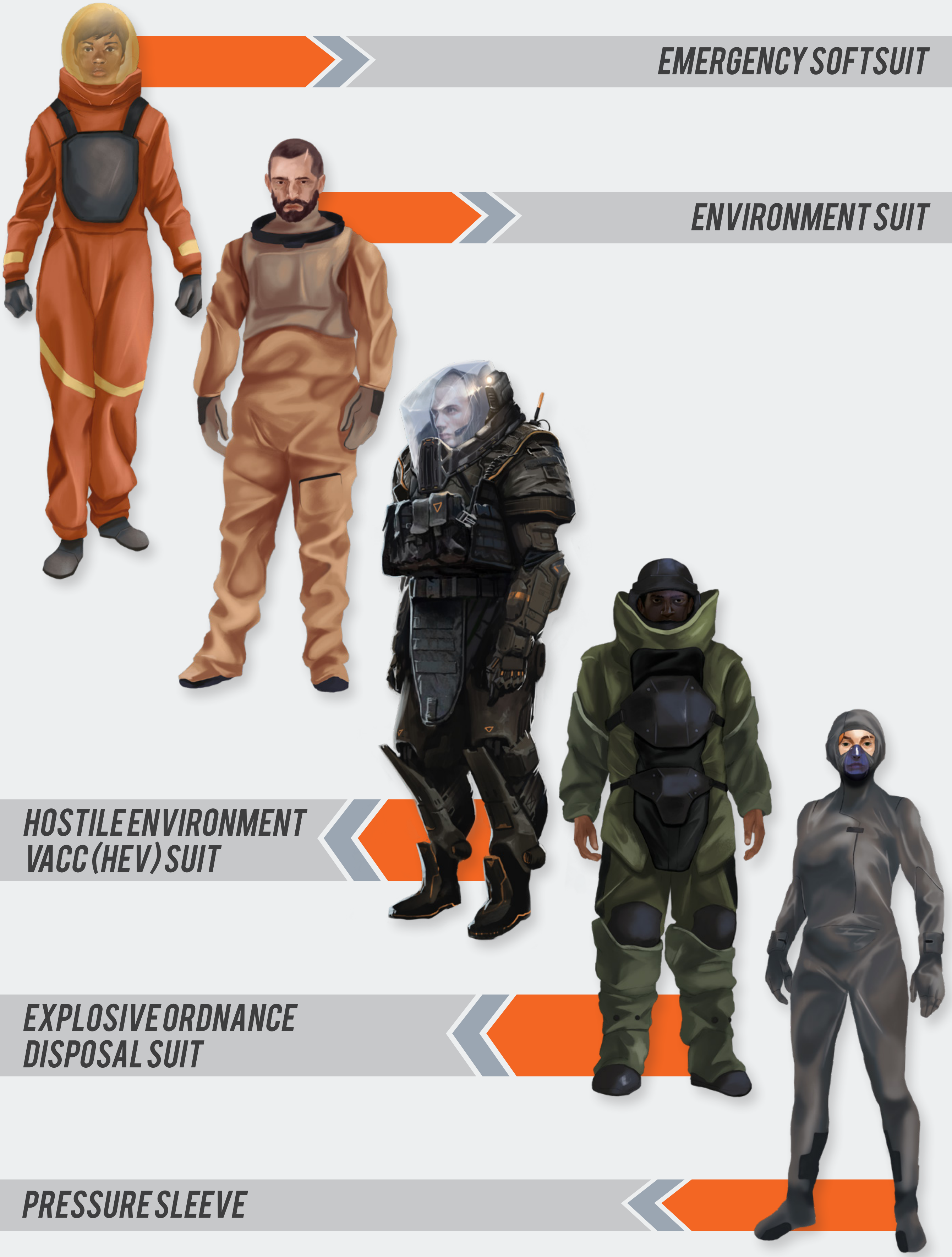
Environment Suit: The environment suit will protect a Traveller from conditions not severe enough to warrant a vacc suit. Similar to the combat environment suit, but designed to be sold to the general public, the environment suit is a neck to toe, airtight, loosely fitting suit. Generally worn open at the neck and wrists, the environment suit can be sealed by donning gauntlets and a clear flexible plastic hood and an environment mask (see page 98), giving complete protection against chemical agents, tainted atmospheres, biological agents and some defence against radiation.

This protects against most atmospheric hazards and supports the user in Very Thin atmospheres. It will fail fairly quickly in a Trace atmosphere (D3 hours) and more rapidly (D3 x 10 minutes) in vacuum. The suit will protect against most Exotic atmospheres but requires oxygen tanks for life support. It is not designed for Corrosive or Insidious atmospheres and is not powered or heated, although it will protect Travellers from temperatures between +/-50°C. An electronics suite is not included, nor is a life support system, although the latter is often added.

Explosive Ordnance Disposal Suit: This very heavily armoured suit is designed to mitigate the worst effects of an explosion at extremely close ranges at the expense of mobility. Fine dexterity is not affected, as the hands retain freedom of action, but other movements are difficult. The movement speed of the wearer is halved and all physical actions that do not require manual dexterity alone suffer DM-2. While not strictly a military suit, purchase may be restricted on worlds with high Law Levels. A life support system is not included but can be added.

Hostile Environment Vacc (HEV) Suit: Hostile environment vacc suits (HEV suits) are designed for conditions where a normal vacc suit would be insufficient, such as deep underwater, worlds with toxic atmosphere, extremes of radiation or temperature. HEV suits provide life support for six hours and will protect a Traveller from temperatures of near absolute zero to 600°C. It includes the Basic Submarine Functionality modification.

Pressure Sleeve: A form-fitting garment similar to a wetsuit, worn under the uniform by some spacefaring services. The sleeve is designed to protect the user in low pressure environments (allowing normal function in Very Thin and Trace atmospheres) and give some protection against vacuum. The ankles seal to boots and a set of gloves are normally carried in a belt pouch. To be of any use, the suit's hood must be pulled up and sealed to a life-support mask (see page 99, not included in the price of the suit). The pressure sleeve is designed to give personnel a survival margin in an emergency. It is not a substitute for a proper vacc suit, although it can be worn under one. A user with a proper mask can function indefinitely in a Very Thin atmosphere, for 15 minutes in Trace Atmosphere and five minutes in hard vacuum. An electronics suite is not included.



EMERGENCY SOFTSUIT

ENVIRONMENT SUIT

HOSTILE ENVIRONMENT VACC (HEV) SUIT

EXPLOSIVE ORDNANCE DISPOSAL SUIT

PRESSURE SLEEVE

Rescue Suit: A rescue suit is a heavy vacc suit designed for emergency damage control or entering a ravaged spacecraft. It is very tough and some models are sold as ‘boarding suits’ to mercenary forces who cannot afford or obtain combat armour. The rescue suit carries oxygen tanks with a six-hour capacity and tools equivalent to the Vacc Emergency Kit (see page 121) – but with a rescue bubble, not an inflatable radar bubble. Rescue suits are mainly designed to protect against physical hazards like torn wreckage, debris and radiation.

Shipsuit: A shipsuit strikes a balance between a shipboard uniform and a light duty vacc suit. This may be worn as clothing but not in conjunction with undergarments (or a pressure sleeve) or any additional forms of armour. It is light enough for daily use; with waste collectors active it can be worn continuously for a week, with growing discomfort, and comfortable enough for sleep even in full gravity. The standard shipsuit comes equipped with boots, gloves stored in pockets and a deployable soft helmet stowed in a padded collar. The suit’s multi-layered material contains an oxygenated gel which provides life support for 30 minutes. Attachment points on the suit allow connection to external life support sources. The standard suit does not include an electronics suite but has an integral 500-kilometre range transceiver built into the collar.

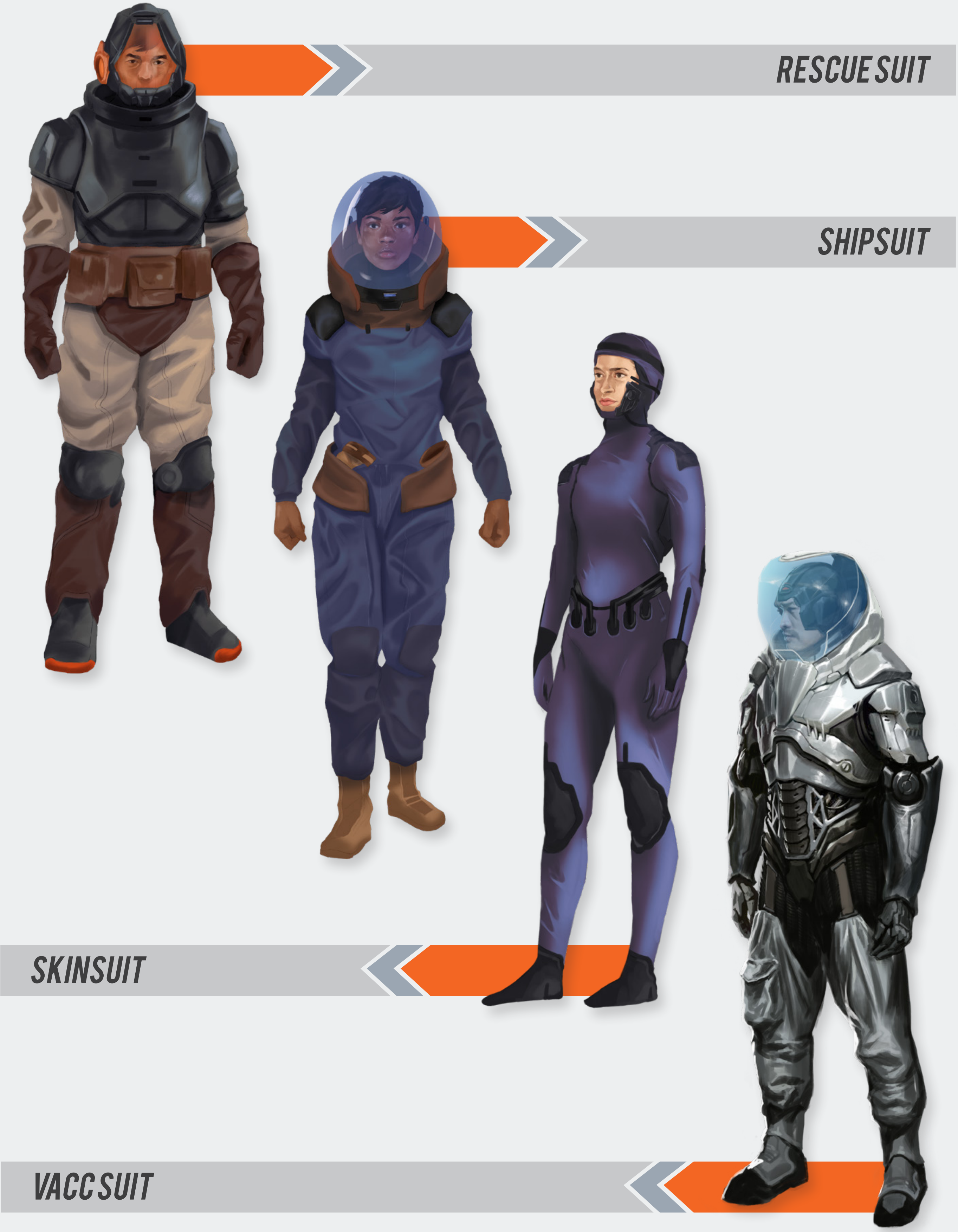
The deluxe version of the shipsuit includes a full electronics suite. It also includes the auto protect kit to allow automatic and selective deployment of a hard helmet, gloves and boots. This sturdier suit provides a full hour of life support capability and can be customised with any suit modification.

Shipsuits do not always include standard life support systems; such options can be purchased separately. A full life support system will significantly increase discomfort if the suit is worn for more than eight hours or used to sit or sleep, however life support belts (see page 24) will not.

Skinsuit: A skinsuit has been described as the only suit you need to wear. On some worlds it is a fashion statement but on most it is an extremely expensive survival suit. The skinsuit is a thin tight-fitting bodysuit that can optionally cover the hands, feet and most of the head. An integral compressed transparent shield can deploy on command to cover the face and act as a breather mask. Tubes extend to cover all orifices, recycling water and all other wastes similar to a hydro-reclamation suit (see page 103) but it does not require manual cleaning. Body heat and motion powers the suit; nanomachines keep it clean. Polychromatic particles allow the suit to change colours or display patterns over the body’s entire surface, including the face shield, providing the equivalent of full motion camouflage.

The skinsuit can function as an environment suit (see page 29), protecting against adverse effects of all atmospheres from Very Thin to Dense and for short periods of exposure to Trace and Vacuum, having integral auto protect kit (see page 20) functionality. It protects against cold down to -50°C and heat up to 75°C. The skinsuit does not include an electronics suite.

Vacc Suit: At lower Tech Levels, the standard vacc suit is bulky, providing protection from vacuum and temperatures encountered in space. The suit also gives some radiation protection and includes a six-hour air supply. At higher Tech Levels, the vacc suit becomes much thinner and easier to use, although its level of protection increases.


RESCUE SUIT
SHIPSUIT
SKINSUIT
VACC SUIT

MILITARY SUITS

Military suits are considered Category 4 items. Even when legal, they may be difficult to obtain, requiring a special order if available at all. Accredited military units have greater success in acquisition but such items are not routinely stocked at startown armouries.

Boarding Vacc Suit: An armoured suit hardened to the dangers of exposure to vacuum or hostile environments, the boarding vacc suit was originally used to help battle pirates when life support failed during an attack. It includes a six-hour air supply. As technology improves the suits become thinner and sturdier, revolutionising their use in ship-to-ship combat. The advanced version of this suit uses poly carapace plates to enhance protection.

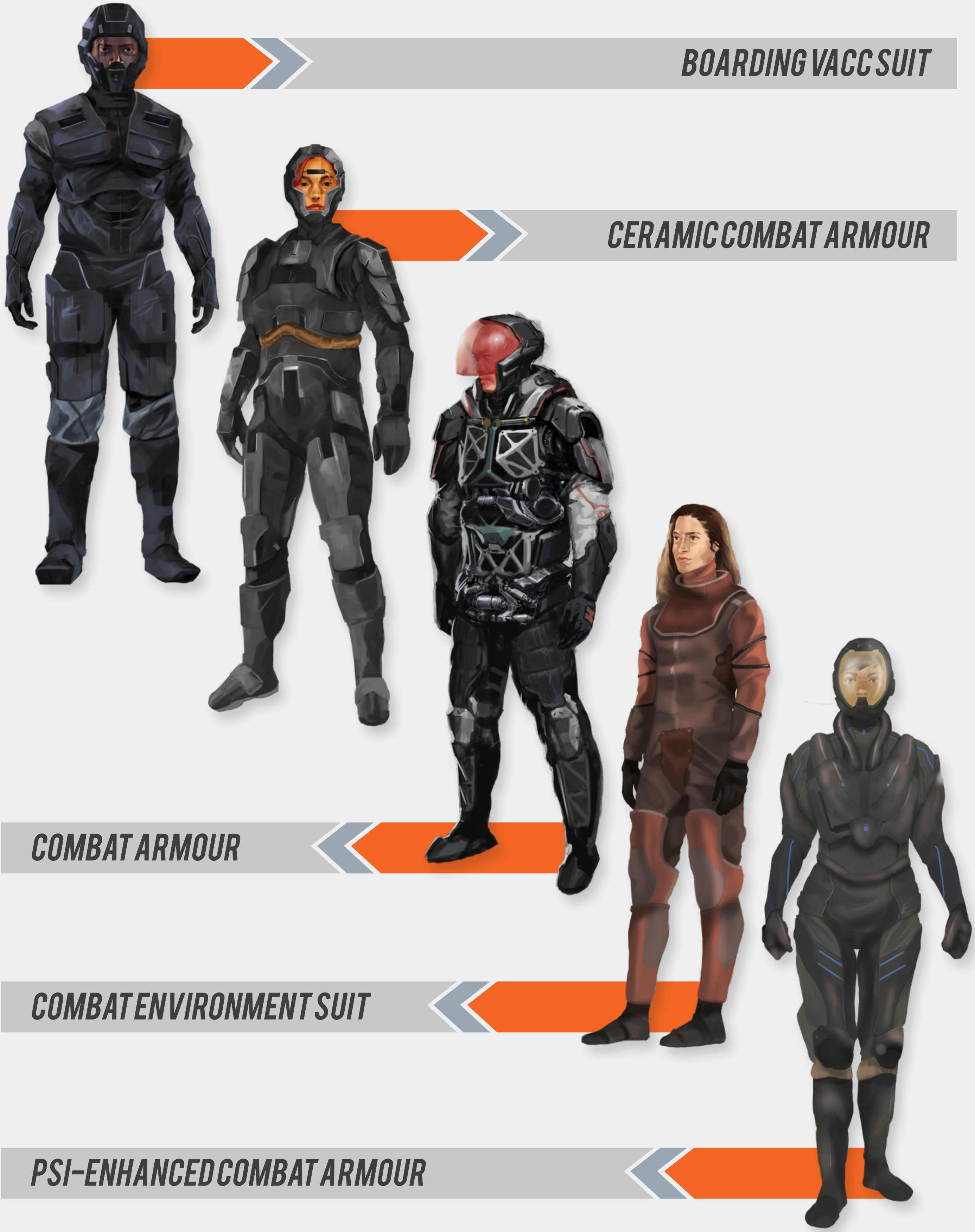
Ceramic Combat Armour: A heavy suit of advanced materials, overlapping ceramic alloy plates grant this armour and integrated helmet extreme durability. Besides the six-hour capacity for complete environmental sealing, the ceramic alloy grants a much higher degree of protection against lasers, flamethrowers and other energy-based attacks.

Combat Armour: Combat armour is a complete array of metal and synthetic armour. It contains oxygen tanks for six hours and a recycling unit which can more than double this endurance if the wearer is not unduly exerting themself.

Combat Environment Suit: A neck to toe, airtight, loosely fitting suit constructed of ballistic cloth. Generally worn open at the neck and wrists, the combat environment suit can be sealed by donning gauntlets and a clear flexible plastic hood, giving complete protection against chemical agents, tainted atmospheres, biological agents and moderate defence against radiation. A combat environment suit will protect against most atmospheric hazards and support the user in Very Thin atmospheres. It will fail fairly quickly in a Trace atmosphere (D3 hours typically) and more rapidly (D3 x 10 minutes) in vacuum. It is not designed for Corrosive or Insidious atmospheres and is not powered or heated, although it will protect Travellers from temperatures between +/-50°C. Neither an electronics suite nor life support is included.

Psi-Enhanced Combat Armour: This suit of advanced combat armour is rigged with a latticework of neural crystals, drawing from the wearer's natural psionic strength to create an invisible reinforcement. As well as having a full eight-hour air supply built into the suit when sealed, the wearer adds half (round down) their PSI to the Protection score of the armour while worn.

ARMOUR TYPE	PROTECTION	TL	RAD	KG	COST	REQUIRED SKILL
Boarding Vacc Suit, Basic	+11	11	50	25	Cr18000	Vacc Suit 1
Boarding Vacc Suit, Improved	+13	12	75	12	Cr24000	Vacc Suit 1
Boarding Vacc Suit, Advanced	+16	13	90	12	Cr48000	Vacc Suit 1
Ceramic Combat Armour	+12 (+18 vs. fire, lasers, and energy)	13	150	15	Cr90000	Vacc Suit 1
Combat Armour, Basic	+13	10	85	20	Cr96000	Vacc Suit 1
Combat Armour, Improved	+17	12	145	16	Cr88000	Vacc Suit 0
Combat Armour, Advanced	+19	14	180	12	Cr160000	Vacc Suit 0
Combat Environment Suit	+8	10	20	4	Cr1000	None
Psi-Enhanced Combat Armour	+15 (+ ½ PSI)	16	250	10	Cr500000	None


BOARDING VACC SUIT
CERAMIC COMBAT ARMOUR
COMBAT ARMOUR
COMBAT ENVIRONMENT SUIT
PSI-ENHANCED COMBAT ARMOUR

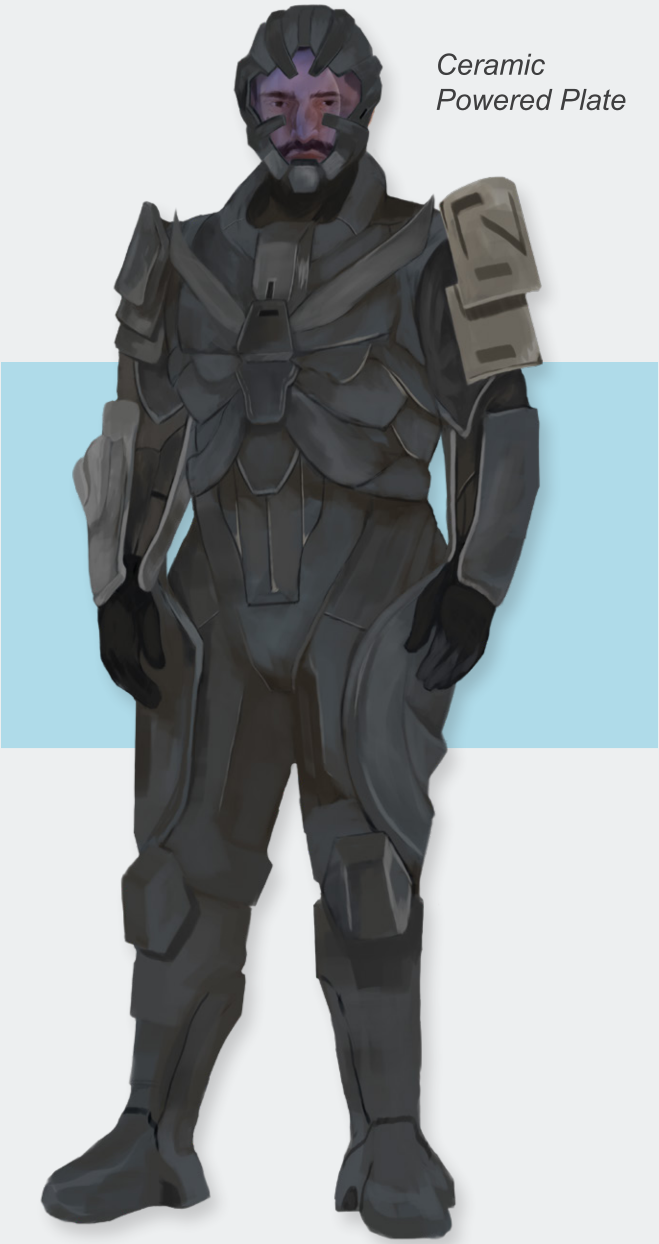
POWERED SUITS

There is a class of armoured suit falling between unpowered combat armour and the extremely advanced battle dress rigs; these are collectively called powered suits. Aided by servos, pneumatics and counterweight mechanisms, powered suits enhance the wearer's strength at the cost of limited use between refuelling or charging. Powered suits, if sealed, offer total protection from gas and airborne biological agents as well as ample radiation shielding.

While powered and active, the mass of a powered suit does not count against the encumbrance of the wearer and is effectively weightless. When a powered suit is not charged or fuelled, the mass of the suit does impair the wearer. Additionally, any STR bonus the armour provides is lost and any DEX penalty the armour imposes is doubled.

Unless otherwise stated, powered suits come equipped with the electronics suite appropriate to their Tech Level, as shown on page 27. Most are considered Category 4 items; the only exceptions being the simple exoskeleton and expensive, difficult to operate extreme environment exploration suit.

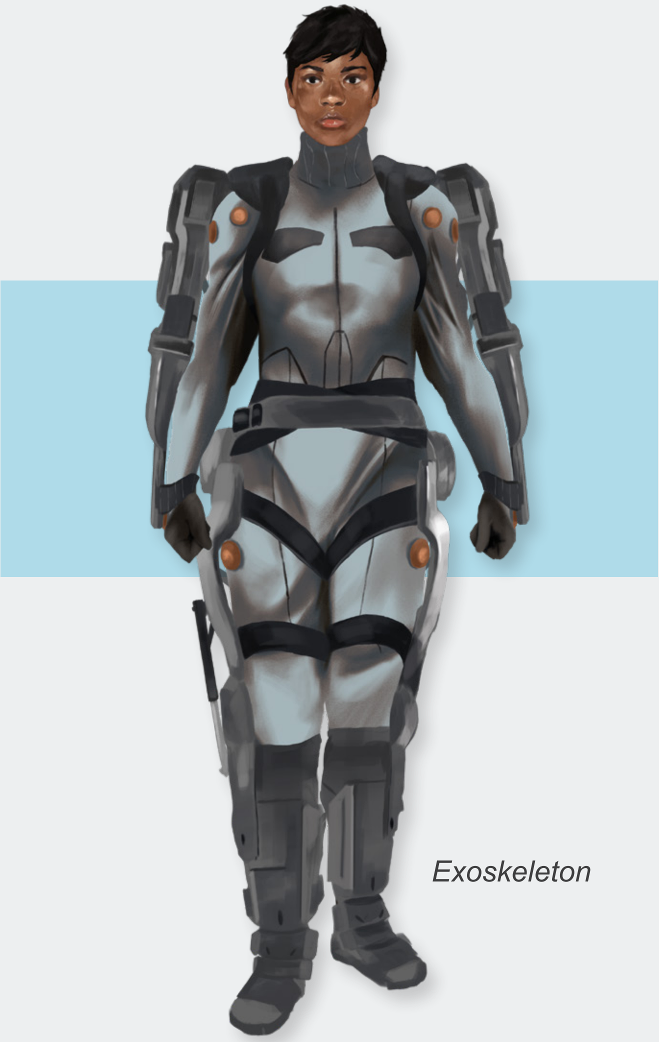
Ceramic Powered Plate: An advanced version of powered plate, made of advanced ceramic-metal hybrid alloys, this armoured suit has a higher rate of protection against lasers, flamethrowers and other heat or fire-based attacks. Also, while the suit is running on its 85 hour power cell (Cr250 to replace), it adds STR+2 to the Traveller but inflicts a DEX-2 penalty.



Ceramic Powered Plate

ARMOUR TYPE	PROTECTION	TL	RAD	KG	COST	REQUIRED SKILL
Ceramic Powered Plate	+16 (+20 vs. fire, lasers, and energy)	13	175	35	Cr300000	Vacc Suit 1
Exoskeleton, Basic	+0	9	—	16	Cr10000	Vacc Suit 0
Exoskeleton, Improved	+0	12	—	10	Cr20000	None
E3 Suit	+16	14	250	30	Cr500000	Vacc Suit 3
Grav-Enhanced Powered Plate	+20	15	220	32	Cr180000	Vacc Suit 0
Mechanical Carapace, Basic	+8	9	30	30	Cr25000	Vacc Suit 2
Mechanical Carapace, Improved	+10	12	60	25	Cr50000	Vacc Suit 1
Powered Plate, Basic	+14	10	120	40	Cr80000	Vacc Suit 1
Powered Plate, Improved	+18	14	200	30	Cr120000	Vacc Suit 0

Exoskeleton: More frame than suit, the exoskeleton is a civilian aid to those with mobility problems or who require extra help to carry large loads or operate in high gravity. This suit is little more than a frame of powered pneumatic limbs that clamp upon the wearer. The TL9 exoskeleton frame adds STR+1 to the wearer – to a minimum value of six – but inflicts a DEX-1 penalty and triples the encumbrance limits of the wearer. The TL12 version adds STR+3 – to a minimum value of 9 – and does not impose a DEX penalty, whilst quadrupling the wearer's encumbrance level. This improved suit also responds to voice command to connect itself to the wearer and can be programmed to walk and navigate autonomously to a defined location. Exoskeletons have rechargeable battery power for 72 hours of operation. The wearer of an exoskeleton can walk normally in gravity up to 3G (4G at TL12) but still suffers initial high gravity acclimation penalties. An exoskeleton provides no armour or environmental protection and does not include an electronics suite.



Exoskeleton

Extreme Environment Exploration (E3) Suit: Some environments are too hazardous for even HEV suits. In places where the atmosphere is too dense or hazardous, deep under oceans or where gravity prevents easy motion, the extreme environment exploration (E3) suit is a requirement.

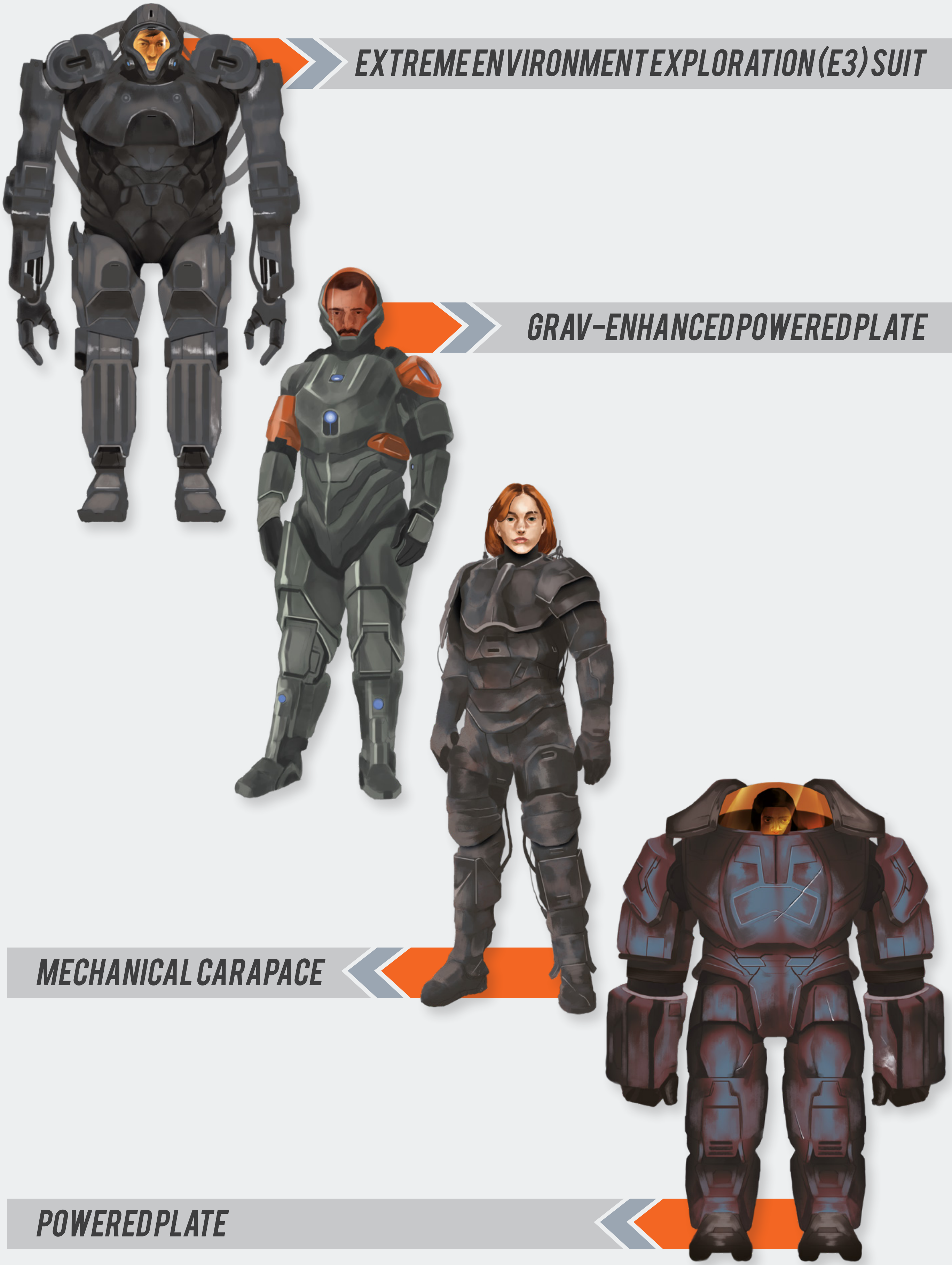
This heavy powered suit uses waldos instead of arms, allowing a trained operator to manipulate items even when gravity reaches extremes of up to 5G. The suit will fully protect against temperatures from absolute zero to 1400°C and from corrosive atmospheres. After 72 hours, use in insidious atmospheres will cause the suit to lose one point of Protection every hour until destroyed; this damage can be repaired at 10% of the suit's cost per point. The suit is rated to 10,000 metres depth in water under standard atmosphere and gravity.

An E3 suit has power and life support for eight hours of operation. Life support can be extended at additional cost but power cannot. An operator who minimises movement and actions can stretch the power to twice its rated duration or three times if operating in relatively benign environments. Once power fails, the operator feels the full weight of the suit and cannot operate the hand waldos. When powered, the suit grants STR +2 but inflicts DEX-2 in addition to any penalty imposed by lack of skill.

Grav-Enhanced Powered Plate: A much-improved version of the powered plate suit, this high-tech armour comes equipped with gravitic gyros in its limbs and torso. These increase the wearer's abilities without excessive drain of the suit's 500-hour power cell (Cr750 to replace) and adds STR+3 to the wearer while only reducing DEX by -1 when unpowered. Additionally, the grav-enhanced powered plate can use the grav-gyros in its legs to move faster, increasing speed by +50%.

Mechanical Carapace: A suit of sealed carapace plates attached to a simple framework of mechanical ratchets and pneumatics, this armour is durable but not very sophisticated. Fuelled for up to 10 hours (Cr25 to refuel), the suit adds STR+1 to the Traveller but inflicts a DEX-1 penalty.

Powered Plate: A large and bulky suit of insulated powered armour made of metallic plates forming a complete body shell, powered plate is tough and inflexible. So long as the suit's 100-hour power cell (Cr250 to replace) has energy the suit adds STR+2 to the wearer but inflicts a DEX-2 penalty. The TL14 version has a 200-hour power cell and adds STR+3 but inflicts a DEX-1 penalty, at a cost of Cr1000.


EXTREME ENVIRONMENT EXPLORATION (E3) SUIT
GRAV-ENHANCED POWERED PLATE
MECHANICAL CARAPACE
POWERED PLATE

BATTLE DRESS

Representing the ultimate in personal protection, battle dress is considered an advanced, powered version of combat armour but it is actually constructed very differently. Battle dress enhances the strength and senses of individuals with variable feedback personal controls, servo-powered limbs and assorted electronic assistance.

Basic suits do not come with any integrated weaponry and troops are usually armed with the best small arms and energy weapons available, carried in hand like regular troops, although powerful weaponry can also be integrated into the battle dress itself to ensure the operator is never without defence. It is also common for battle dress to be fitted with integral grav assist but this is not universal.

All battle dress comes equipped with an electronics suite (see page 27) appropriate to its Tech Level and with the following additional standard equipment suitable to its Tech Level of manufacture:

Personal Heads-up Display (P-HUD): Combined weapons/data HUD; each weapon requires separate HUD modules.

Transceiver Encryption Module: Requires an equipped module on the target transceiver to establish secure communications links.

Security/2 software: This program runs separate from the suit's computer, protecting the suit from hacking.

Additionally, battle dress is supremely customisable, either at point of manufacture or in the field, given sufficient technical expertise. Because of this, each suit of battle dress is listed as having a number of equipment Slots which can be filled with modifications, additions and weaponry. See page 44 for battle dress specific modifications.

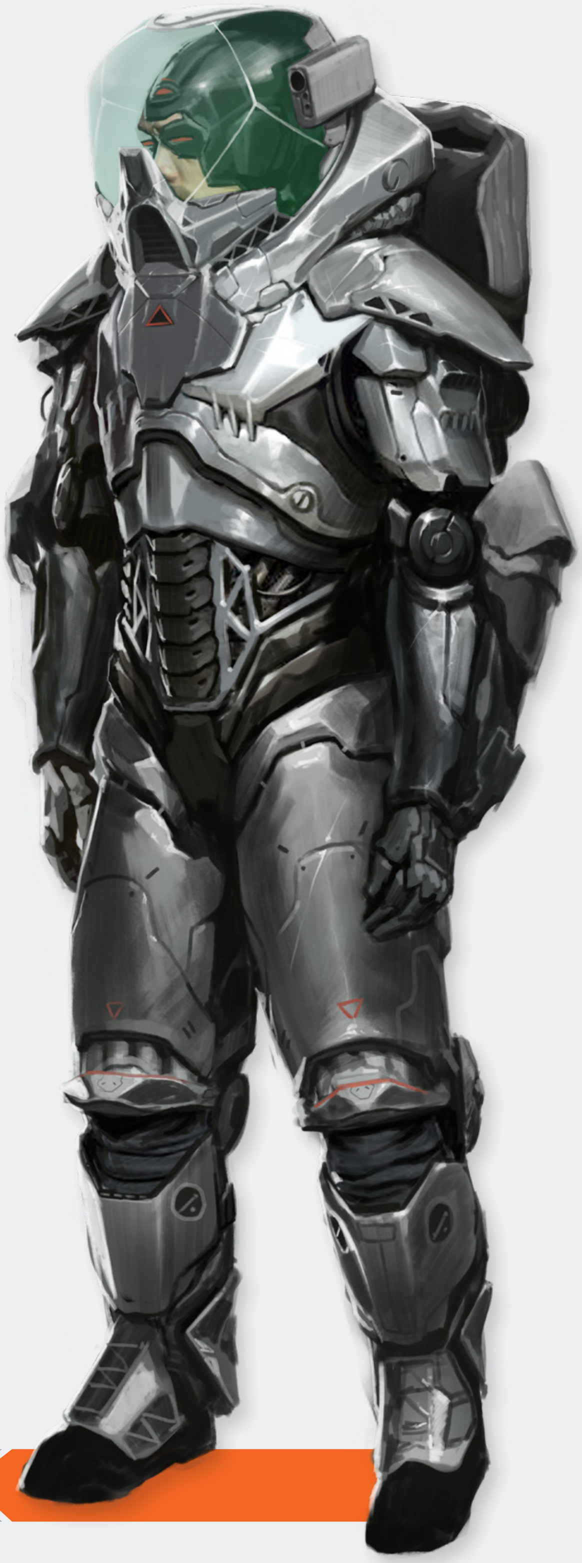
CHARACTERISTICS

Operators wearing battle dress are treated as having enhanced characteristics (usually STR and DEX) for carrying equipment and modifiers in combat but not for taking damage. These enhancements are listed in the description.

In addition, while powered and active, the mass of battle dress does not count against the encumbrance of the operator and is effectively weightless. By default, battle dress comes equipped with fuel cells sufficient for 12 hours of full combat operation.

SURVIVABILITY

Battle dress is effective in conditions where a hostile environment vacc suit would be required, such as deep underwater, worlds with toxic atmosphere, extremes of radiation or temperature. Battle dress provides life support for 12 hours by default.



BATTLE DRESS

ARMOUR TYPE	PROTECTION	TL	RAD	STR	DEX	SLOTS	KG	COST	REQUIRED SKILL
Artillery Battle Dress, Basic	+26	13	245	+6	+2	30	180	Cr275000	Vacc Suit 2
Artillery Battle Dress, Improved	+29	14	290	+8	+2	30	180	Cr320000	Vacc Suit 1
Artillery Battle Dress, Advanced	+32	15	320	+8	+2	33	180	Cr640000	Vacc Suit 1
Assault Battle Dress, Basic	+25	13	250	+4	+4	20	140	Cr300000	Vacc Suit 2
Assault Battle Dress, Improved	+28	14	300	+6	+4	20	140	Cr330000	Vacc Suit 1
Assault Battle Dress, Advanced	+31	15	330	+6	+4	22	140	Cr660000	Vacc Suit 1
Battle Dress, Basic	+22	13	245	+4	+4	16	100	Cr200000	Vacc Suit 2
Battle Dress, Improved	+25	14	290	+6	+4	16	100	Cr220000	Vacc Suit 1
Battle Dress, Advanced	+28	15	320	+6	+4	18	100	Cr440000	Vacc Suit 1
Ceramic Battle Dress, Basic	+22 (+32 vs. fire, lasers, and energy)	13	245	+4	+4	16	100	Cr400000	Vacc Suit 2
Ceramic Battle Dress, Improved	+25 (+35 vs. fire, lasers, and energy)	14	290	+6	+4	16	100	Cr440000	Vacc Suit 1
Ceramic Battle Dress, Advanced	+28 (+38 vs. fire, lasers, and energy)	15	320	+6	+4	18	100	Cr880000	Vacc Suit 1
Combat Pioneer Battle Dress, Basic	+23	13	275	+4	+4	12	120	Cr270000	Vacc Suit 2
Combat Pioneer Battle Dress, Improved	+26	14	310	+6	+4	12	120	Cr300000	Vacc Suit 1
Combat Pioneer Battle Dress, Advanced	+29	15	340	+6	+4	14	120	Cr600000	Vacc Suit 1
Command Battle Dress, Basic	+24	13	275	+4	+4	18	110	Cr325000	Vacc Suit 2
Command Battle Dress, Improved	+27	14	310	+6	+4	18	110	Cr350000	Vacc Suit 1
Command Battle Dress, Advanced	+30	15	340	+6	+4	20	110	Cr700000	Vacc Suit 1
Logistics Battle Dress, Basic	+22	13	245	+8	+0	20	220	Cr290000	Vacc Suit 2
Logistics Battle Dress, Improved	+25	14	290	+8	+0	20	220	Cr320000	Vacc Suit 2
Logistics Battle Dress, Advanced	+28	15	320	+8	+0	22	220	Cr640000	Vacc Suit 2
Psi-Commando Battle Dress, Basic	+26 (+ ½ PSI)	15	300	+6	+4	20	110	MCr1.2	Vacc Suit 1
Psi-Commando Battle Dress, Advanced	+29 (+ ½ PSI)	16	330	+6	+4	22	110	MCr2.4	Vacc Suit 1
Psi-Enhanced Battle Dress, Basic	+22 (+ ½ PSI)	13	245	+4	+4	16	100	Cr800000	Vacc Suit 1
Psi-Enhanced Battle Dress, Improved	+25 (+ ½ PSI)	14	290	+6	+4	16	100	Cr880000	Vacc Suit 1
Psi-Enhanced Battle Dress, Advanced	+28 (+ ½ PSI)	15	320	+6	+4	18	100	MCr1.76	Vacc Suit 1
Scout Battle Dress, Basic	+20	13	230	+2	+6	12	90	Cr270000	Vacc Suit 1
Scout Battle Dress, Improved	+23	14	260	+4	+6	12	90	Cr300000	Vacc Suit 1
Scout Battle Dress, Advanced	+26	15	290	+4	+6	12	90	Cr600000	Vacc Suit 1

Artillery Battle Dress: Artillery battle dress is more heavily armoured than standard and has heavier servos that enable it to carry heavy weapons. However, it is too large and clumsy to use handheld weapons normally and any attempt to do so will result in DM-2 being applied to all attack rolls.

Assault Battle Dress: Assault battle dress sacrifices mobility for extra armour and firepower. A laser weapon is usually fitted to the suit's left arm and a grenade launcher is often installed on the right shoulder to allow for self-support and engagement of differing targets (mounts and weapons not included). In addition, a hand-held weapon is carried by troops in assault battle dress.

Battle Dress: The standard entry-level battle dress suit, combining mobility with protection and weapons capability.

Ceramic Battle Dress: Designed and built with a layer of advanced ceramic-metal hybrid materials around its armoured plates, ceramic battle dress is especially useful for soldiers who fight enemies relying on laser or energy-based weaponry. Already highly efficient against conventional attacks, this battle dress is all but immune to these weapons.

Combat Pioneer Battle Dress: Combat pioneer battle dress is slightly heavier than the standard model. It mounts no default weapons but has a built-in sensor suite appropriate to its Tech Levels designed to detect explosives and other hazards. This suit utilises a range of built-in backpack-mounted tools including a Combat Engineering Tool Set (see page 125), drills and decontamination equipment. The suit can self-decontaminate from most chemical and biological agents.

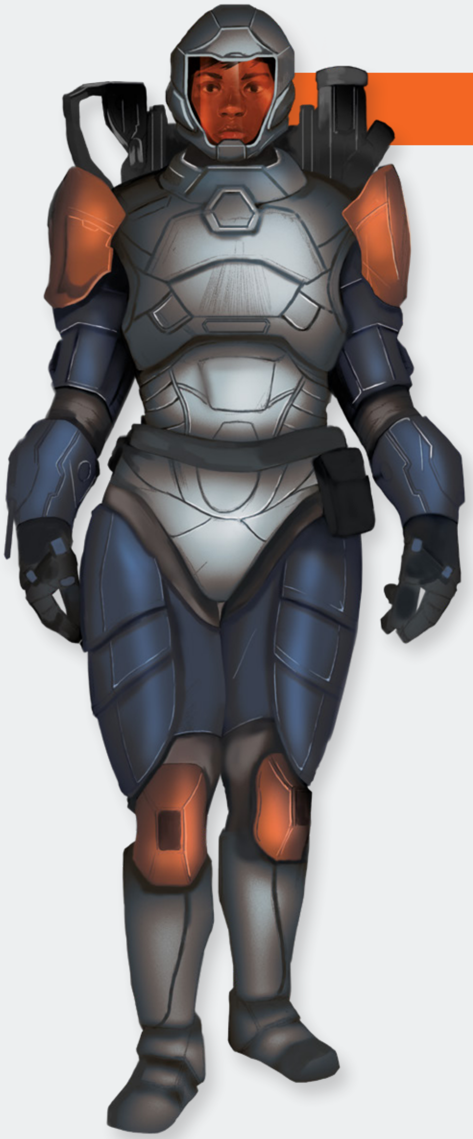
Command Battle Dress: Officers use command battle dress. Its defensive capabilities are superior to those of standard battle dress and it carries a more comprehensive communications suite with twice the range, greater bandwidth and command-assist computer software. This equipment provides DM+2 to all Tactics (military) checks the operator makes.

Logistics Battle Dress: This suit is optimised for its load-carrying capability. The logistics suit allows the operator to carry small-vehicle loads of ammunition and supplies into places where only infantry can go. Standard missions include ferrying field repair kits (with spares), bulk ammunition boxes and fast-load kits for close support grenade launchers. Given suitable packaging, an operator can carry loads equal to six times their STR+END (using the battle dress' enhanced STR) and will not count as being heavily encumbered (see page 98 of the *Traveller Core Rulebook*). Logistics suits are also used by some battlefield medics.

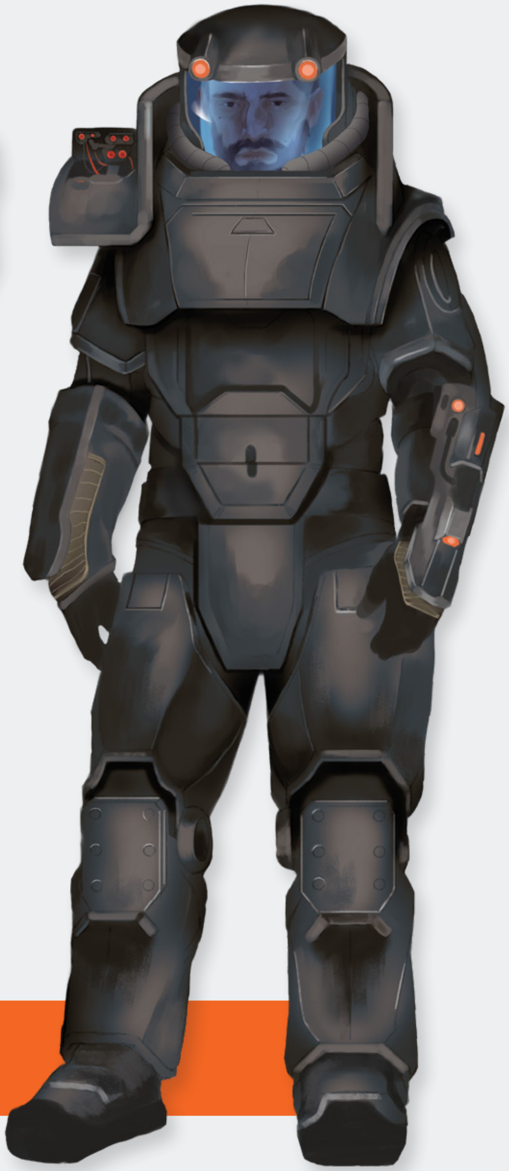
Psi-Commando Battle Dress: Similar to the psi-enhanced battle dress, the psi-commando suit retains the invisible telekinetic shield and features enhancements that include active psionic interfaces and superior heating and cooling systems designed to aid teleportation abilities. The operator adds half (rounded up) their PSI to the Protection score of the armour. In addition, the psi-commando battle dress counts as part of the operator's own body when teleporting (thus not increasing the PSI cost of Teleportation) and doubles the vertical distances that may be teleported, as described on page 234 of the *Traveller Core Rulebook*.

Psi-Enhanced Battle Dress: This suit is interwoven with highly specialised crystalline fibres and conduits that pick up on the latent psionic abilities of the operator. The mental energies created and manipulated by the conduits create an invisible telekinetic field inside the plating of the suit, protecting them from attack. The operator adds half (rounded up) their PSI score to the Protection score of the armour while worn.

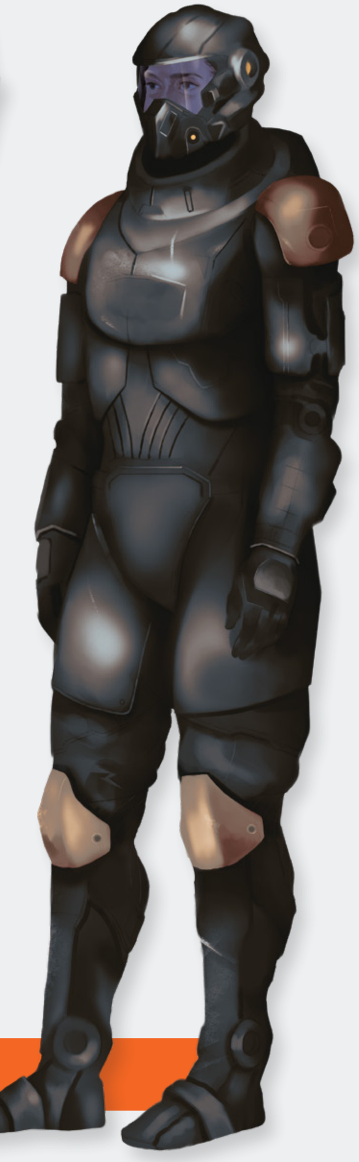
Scout Battle Dress: Scout battle dress is normally used by reconnaissance units, artillery spotters and other soldiers needing protection and mobility. It is popular among some officers and rapid-assault units. Grav assist is fitted as standard and included in the price.



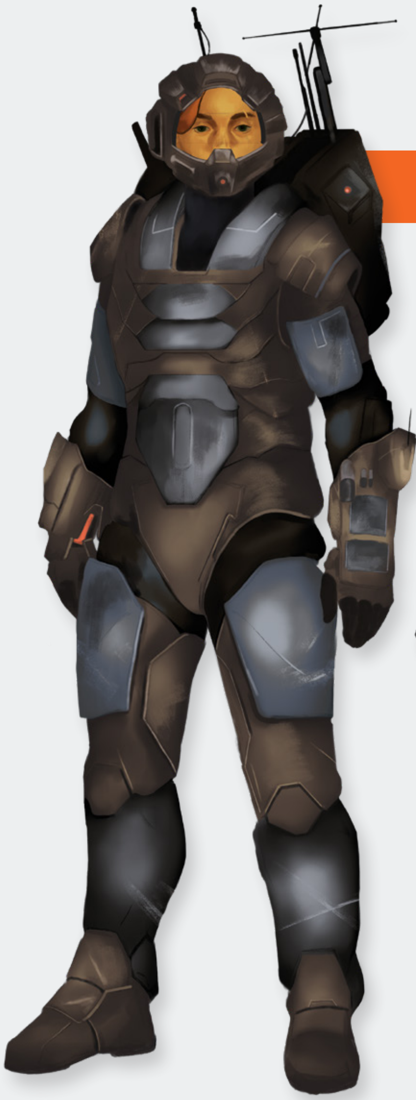
ARTILLERY BATTLEDRESS



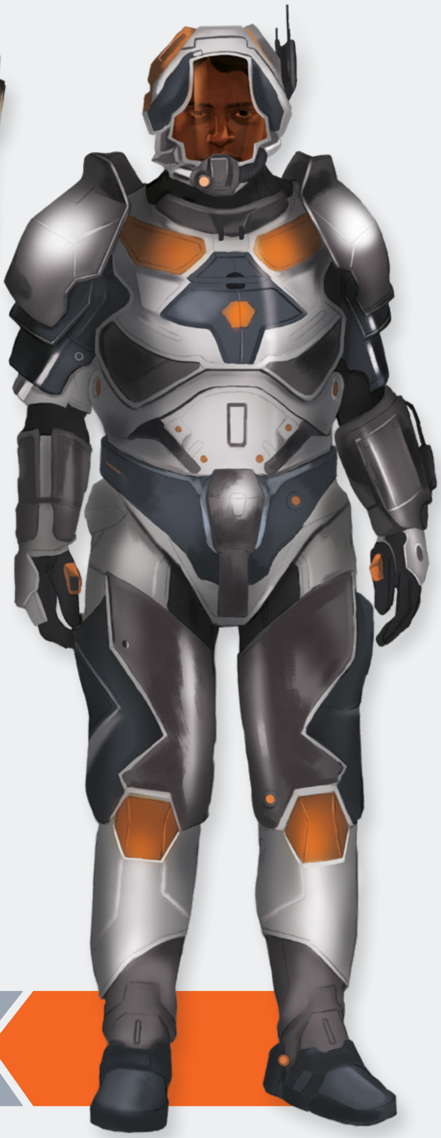
ASSAULT BATTLEDRESS



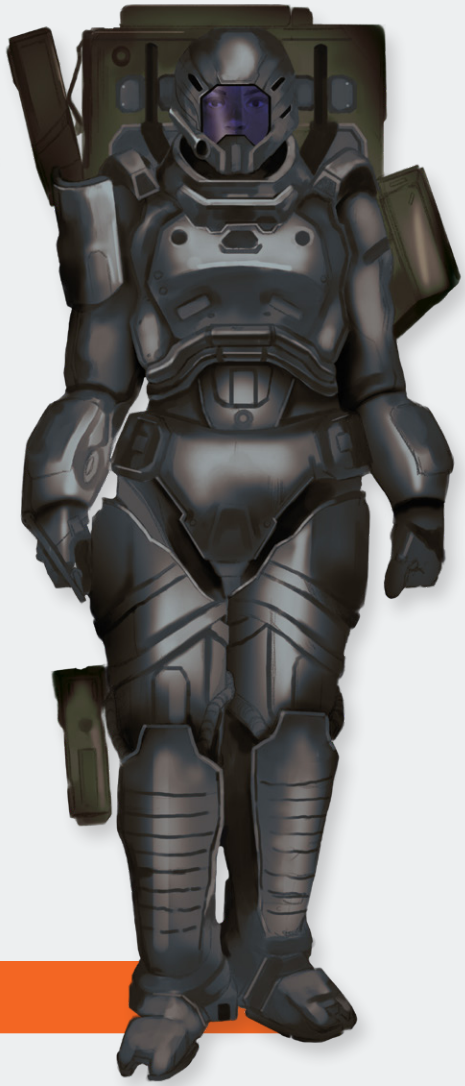
CERAMIC BATTLEDRESS



COMBAT PIONEER BATTLEDRESS

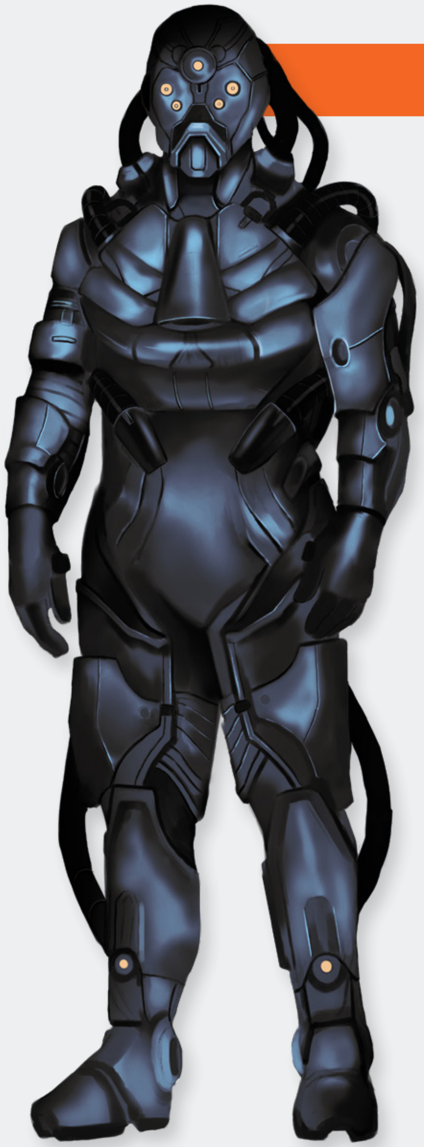


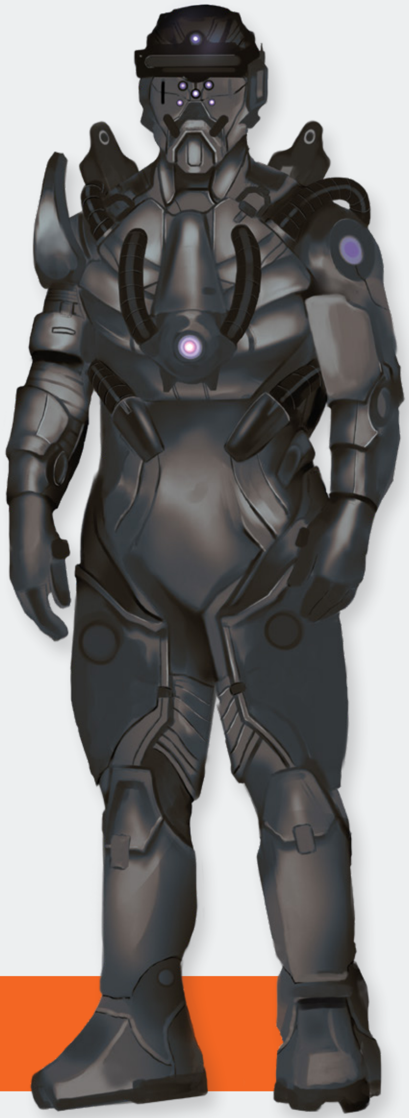
COMMAND BATTLEDRESS



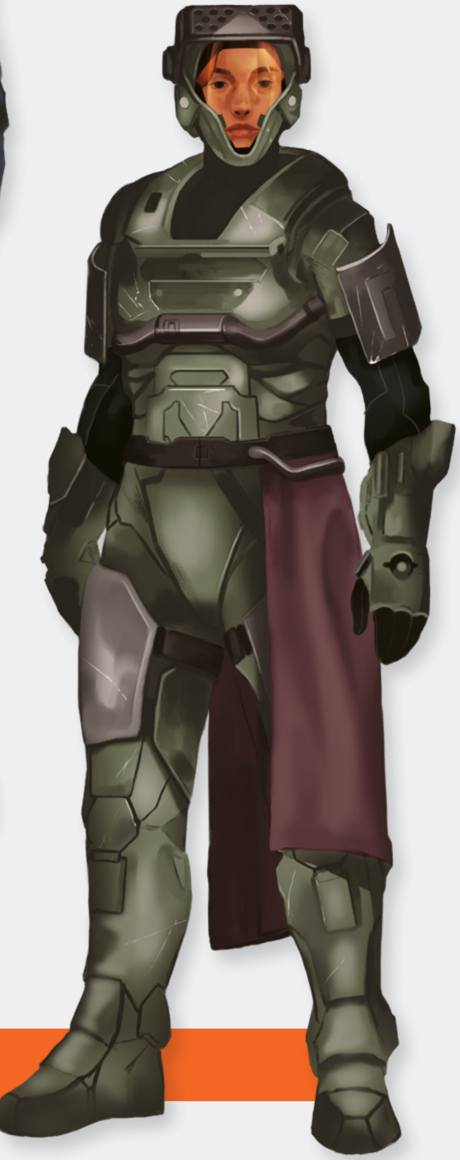
LOGISTICS BATTLEDRESS

PSI-COMMANDO BATTLEDRESS





PSI-ENHANCED BATTLEDRESS



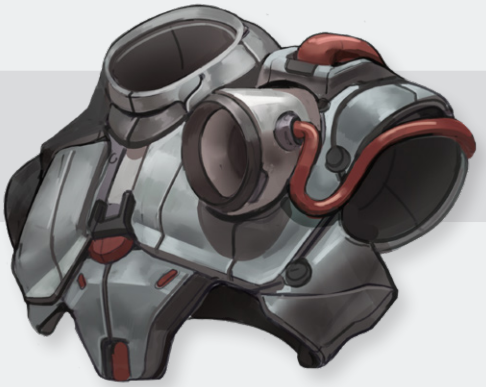
SCOUT BATTLEDRESS

BATTLE DRESS MODIFICATIONS

Battle dress can be equipped with any of the general suit modifications useable with other protective suits but Travellers will find battle dress may already meet or exceed the specifications of these customisations. Each of these modifications with a non-zero mass will consume one equipment Slot per two kilograms, rounded up.

Battle dress has its own modifications that allow extreme customisation and the creation of truly unique suits. Most modifications listed here require one or more equipment Slots. It is generally possible to install modifications more than once, although specific limits may be noted in the description. Battle dress may not have more total modifications than its equipment Slots score allows.

Some battle dress options may be available for other types of armour but such modifications face the same legal restrictions as battle dress and are not generally available as retrofits to existing armour. If the Referee allows them on other forms of armour, non-battle dress modifications mass three kilograms per indicated slot. A non-battle dress suit cannot install more than 10 Slots of battle dress modifications and some are only available for powered armour.



Anti-Missile System

Anti-Missile Systems

Anti-Missile System	Defence Roll DM
Laser	+1
Advanced Laser	+4

ACTIVE CAMOUFLAGE

This is a highly advanced form of camouflage that uses quantum waveguides to bend light around battle dress, resulting in near-invisibility. At any range, it grants DM+4 to Stealth checks versus Recon and most EM sensors (but not densitometers, sonic, or chemical detectors).

Modification	TL	Effect	Slots	Cost
Active Camouflage	15	DM+4 to Stealth checks vs. Recon and sensors	1	Cr200000

ADVANCED LIFE SUPPORT

Battle dress can be adapted to provide complete life support, including food, water, waste collection and recycling for up to 72 hours. Note that standard power cells last for only 12 hours. Life may be sustained for a full 72 hours using advanced life support but without additional fuel cells the suit might be immobilised, running on emergency power for 60 of those hours.

Modification	TL	Effect	Slots	Cost
Advanced Life Support	13	Increases suit life support capability to 72 hours	2	Cr20000

ANTI-MISSILE SYSTEM

This automated system is capable of tracking incoming missiles and grenades and destroying them before they reach the operator, typically with rapid-firing lasers.

Anti-missile systems automatically destroy an incoming missile or grenade on a 2D roll of 8+, with a DM appropriate to their type as shown on the Anti-Missile Systems table. DM-1 is applied to every additional incoming attack made in the same round.

Advanced systems are capable of shooting down any solid projectile, including shells and bullets. They remain ineffective against energy-based weapons.

All anti-missile systems can be used under manual control as ordinary weapons with the indicated characteristics. These are capable of firing for as long as the battle dress has power.

Anti-Missile System	TL	Range	Damage	Slots	Cost	Magazine	Magazine Cost	Traits
Laser	13	500	1D	3	Cr75000	—	—	Auto 3
Advanced Laser	15	1000	2D	2	Cr125000	—	—	Auto 4

ENHANCED MOBILITY

By fitting faster-acting servos and responsive control systems, the operator's effective dexterity is boosted beyond human limits. This modification also increases an operator's base movement rate by 50%. The modification can only be applied to powered armour and each additional application requires twice the number of slots and cost as the previous application.

Modification	TL	Effect	Slots	Cost
Enhanced Mobility	14	Additional DEX+3, +50% movement rate	1	Cr35000

ENHANCED STRENGTH

By fitting more powerful servos and reinforcing the load bearing components of battle dress, the Traveller finds their effective strength boosted immeasurably. This modification also increases an operator's base movement rate by 50%. The modification can only be applied to powered armour and each additional application requires twice the number of slots and cost as the previous application.

Modification	TL	Effect	Slots	Cost
Enhanced Strength	14	Additional STR+3	2	Cr25000

ENVIRONMENT PROTECTION

Battle dress is sufficiently tough to resist most environments but there are worlds whose atmospheres are so thoroughly unpleasant that even advanced armour cannot protect an operator for more than a few hours. Environment protection shields battle dress against corrosive atmospheres (or corrosive and insidious atmospheres, if the more advanced version is purchased) for 72 hours, after which battle dress will start to lose one point of Protection every hour until destroyed. This limit is reset by a thorough decontamination between exposures. Environment damage can be repaired at 10% of the suit's total cost per point of protection lost.

Modification	TL	Effect	Slots	Cost
Environment Protection (corrosive)	13	72-hour corrosive atmosphere protection	1	Cr40000
Environment Protection (insidious)	13	72-hour insidious atmosphere protection	1	Cr150000

FLIGHT PACK

Using an array of efficient rockets and turbines, the flight pack allows battle dress to take to the air. Using a flight pack requires the Flyer (wing) skill and allows the battle dress to travel at up to High speed with an Agility equal to the operator's (battle dress-enhanced) DEX DM. It has a maximum range of 200 kilometres or one hour endurance at 200 kilometres per hour. At maximum velocity of 300 kilometres per hour, the range drops to 135 kilometres.

Modification	TL	Effect	Slots	Cost
Flight Pack	10	Powered flight at High speed, 200km range	6	Cr50000

FUEL CELLS

While advanced battle dress has a suitably long duration for use in battle, additional fuel cells provide much greater flexibility for mission profiles beyond the standard 12 hours. Each additional fuel cell increases the operational duration of battle dress by another 12 hours.

Modification	TL	Effect	Slots	Cost
Fuel Cells	13	Adds 12-hour duration to suit power	2	Cr1000

HEAVY PLATING

The purpose of battle dress is protection but there will always be discerning customers looking for that little bit extra. A series of additional plating fitted to strategic locations across the suit can increase its defensive capabilities further, rendering the operator nigh impervious to all but the heaviest weapons. Heavy plating adds +1 to the Protection score of battle dress and may be applied up to five times to the same suit. However, the third application of heavy plating will reduce the battle dress' DEX bonus by -2.

Modification	TL	Effect	Slots	Cost
Heavy Plating	13	Protection +1, up to 5x, but 3 or more=DEX-2	1	Cr4000

Heavy Plating

HIGH VELOCITY TARGETING ARRAY

This sensor array integrates directly into the battle dress' own suite to adjust weapon systems, allowing them to accurately attack fast-moving objects. The array is typically used when aerial attacks are expected or when the battle dress is dedicated to anti-aircraft duties. Battle dress with a high velocity targeting array ignores all negative DMs incurred for attacking a fast moving target (see the *Traveller Core Rulebook*, page 74).

Modification	TL	Effect	Slots	Cost
High Velocity Targeting Array	15	Negates attack penalty for fast moving targets	2	Cr750000

INTEGRATED TOOLKIT

This modification integrates any toolkit into battle dress, drawing from the suit's power supply. This is specific to the toolkit installed but may be installed multiple times to support several toolkits. Toolkits must be purchased separately.

Modification	TL	Effect	Slots	Cost
Integrated Toolkit	13	Integrates and powers one toolkit	1	Cr3000

INTEGRATED WEAPON MOUNT

For convenience, and to ensure an operator is never without a weapon yet keeps both hands free, battle dress can be constructed with integrated weapons, usually on the back of the arms or shoulders. The cost of this modification is in addition to the cost of the weapons fitted. Mounts range from pistol-sized to heavy weaponry, which allows mounting of weapons ranging to those requiring Heavy Weapons (personal) and even weapons up to 0.25 tons which normally require Heavy Weapons (vehicle) skill. Very heavy weapon mounts are commonly used for tac launchers and light autocannons.

Up to four weapons of the same type fitted to the suit may be fired simultaneously at a target, with the operator able to use a free action to select how many are being fired. This is often called twin-, tri- or quad-linking, although each weapon requires its own mount. These linked weapons attack with single attack rolls, adding +1 damage per damage dice for every additional weapon after the first. So, for example, if battle dress with three assault rifles fires all three, it will only make one attack roll but will deal 3D+6 damage (two additional assault rifles each adding +1 per damage dice).

By doubling the number of slots required, an integrated weapon mount may be equipped with autoloaders and up to 10 additional magazines or power packs. The cost of this is equal to twice the cost of the 10 additional magazines.

Modification	TL	Effect	Slots	Cost
Integrated Weapon Mount (pistol)	10	Integral pistol	1	Cr500
Integrated Weapon Mount (close combat)	10	Integral melee weapons	1	Cr1000
Integrated Weapon Mount (rifle)	10	Integral long arm	2	Cr1000
Integrated Weapon Mount (heavy)	10	Integral heavy weapon (personal)	10	Cr5000
Integrated Weapon Mount (vehicle)	10	Integral heavy weapon up to 250kg	15	Cr10000

ION SHIELD

As with any weapons system, the stakes are ratcheted upward by new innovations. Powered armour may be equipped with an ion shield that negates the effects of personal ion weapons.

Modification	TL	Effect	Slots	Cost
Ion Shield	14	Negates the effects of personal ion weapons	1	Cr5000

PARACHUTE

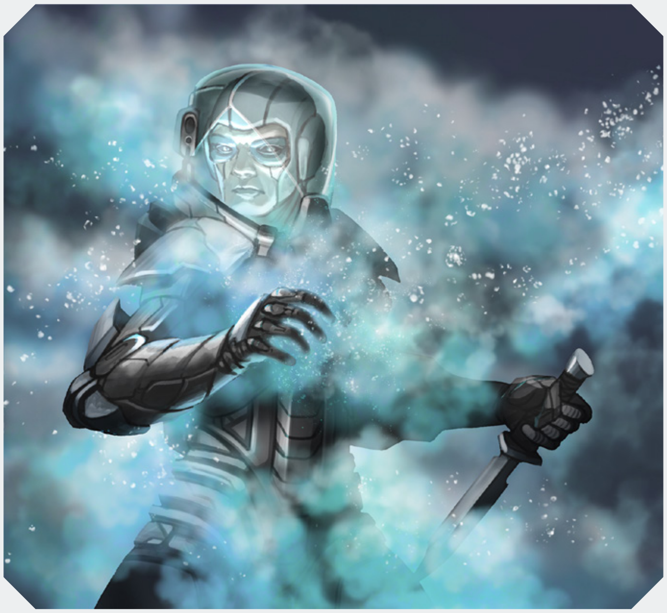
Deployed with a Minor Action, this parachute is capable of bearing the weight of battle dress in Standard or denser Atmospheres (6+). It comes with a complete deployment system, usually mounted on the back of the battle dress and is re-useable once the parachute is retracted. A heavier version is usable in Thin Atmospheres (4 and 5). Retraction is via an automated winch but may result in complications or require disconnection if the chute or its cords snag.

Modification	TL	Effect	Slots	Cost
Parachute	9	Deployment suitable for Atmosphere 6+	2	Cr2500
Parachute (Thin Atmosphere)	9	Deployment suitable for Atmosphere 4–5	4	Cr5000

PRISMATIC AEROSOL

This canister releases a dense cloud of highly reflective particles around the battle dress, obscuring it and rendering laser fire ineffective. An operator can trigger it with a Minor Action. In windless conditions, the cloud remains around the battle dress for 1D rounds and will not move if the battle dress changes location. It will obscure the battle dress (DM-2 to attack rolls) and provide Protection +6 against any laser-based attack. Each prismatic aerosol fitted to battle dress may be used three times. Replacement canisters cost Cr100.

Modification	TL	Effect	Slots	Cost
Prismatic Aerosol	9	Obscures (DM-2), provides Protection +6 vs. lasers	2	Cr6000



SENSOR SUITE

All models of battle dress have integrated PRIS eyepieces, HUDs and computer systems that relay vital information to the operator. A sensor suite greatly expands the capabilities of battle dress, allowing the operator up-to-the-second information on the flow of battle and locations of enemies. Sensor suites range from complex radar/lidar systems, battlefield analysis computers and, at higher Tech Levels, densitometers and neural activity scanners. The DM listed for each level of sensor suite is applied to any Electronics (sensors) checks the operator attempts. Combat pioneer battle dress includes a sensor suite suitable for its Tech Level at no additional cost or slots.

Modification	TL	Effect	Slots	Cost
Sensor Suite (+1)	13	DM+1 to Electronics (sensors) checks	1	Cr20000
Sensor Suite (+2)	14	DM+2 to Electronics (sensors) checks	2	Cr50000
Sensor Suite (+3)	15	DM+3 to Electronics (sensors) checks	2	Cr65000

STEALTH

Whilst camouflage is an effective counter to being targeted on the battlefield, the stealth modification goes much further, attempting to mask the battle dress from every kind of sensor it is likely to encounter, from infrared to densitometers. The DM for each level of Stealth is applied to all Electronics (sensors) checks made to detect the operator.

Modification	TL	Effect	Slots	Cost
Stealth (+1)	13	DM+1 vs. Electronics (sensors) checks	3	Cr50000
Stealth (+2)	14	DM+2 vs. Electronics (sensors) checks	3	Cr100000
Stealth (+3)	15	DM+3 vs. Electronics (sensors) checks	3	Cr125000

AUGMENTS

Travellers roaming the stars know the importance of being well-equipped. Some, however, take this much further, augmenting their bodies to enhance personal mental and physical capabilities. An expanding market of cybernetics caters to these Travellers, offering a bewildering array of upgrades that can make a customer literally super-human.

Although technology is capable of significantly altering and improving the body, obvious cybernetic, genetic or surgical alteration of the human form is frowned upon in many societies.

While humans can be altered to survive on hostile worlds – denizens of a waterworld might be given gills and finger-webbing, while those living on a world with dangerous native micro-organisms might have their immune and digestive systems altered to compensate – unnecessary augmentation is seen as unpleasant and even perverse in many cultures. There are some worlds where genetic alteration or cybernetics are widespread or even mandatory, just as there are worlds where they are strictly forbidden.

Most items in this category can be cybernetic (mechanical or electronic implants and prostheses), biological (genetic engineering and surgical alternation) or both (a more common solution), but the general term of 'augment' is used for all of them.

Augments can take characteristics above the normal maximums for a Traveller's species. Augments are normally grouped into those that affect the torso or the entire body, limbs and the head – generally through enhancement or replacement of sensory organs, although other more subtle augmentation is available. Augmentation pricing and features assume a basic humanoid body type; sophonts who deviate from this may not have access to some augmentations and may have specific augments more suited to their physical characteristics and structure.

INSTALLING AUGMENTS

The installation of augments often requires very extensive surgery. It is assumed that any reputable augments dealer will have access to first class hospital services (this will not apply if the Traveller visits a back street or illegal augments dealer) and so there will normally be no actual danger in the process. However, it will take time, typically 1D weeks, although this is often reduced through the use of Slow Drug (see page 95).

MEDICAL TREATMENT

Augments can interfere with medical treatments. Unless otherwise specified, all long-term care or surgery Medic checks treating an augmented Traveller suffer a negative DM equal to the difference in Tech Level between the medical facility and that of the most advanced augmentation. For example, a Traveller with TL15 augmented Endurance being treated in a TL10 hospital would inflict DM-5 to the surgeon's Medic check.

ELECTROMAGNETIC PULSES

Any weapons that directly affect machinery and electronics (such as the electromagnetic pulse grenade on page 157) will also have the same effect on personal augmentations. Some are immune to this kind of attack and this will be noted in their descriptions. The Ruggedised option (see below) will negate the effects of this attack for augments normally affected by electromagnetic pulses. In general, purely biological augments are immune.

OPTIONS

Many augments have additional customisation options available, some only being available to certain types of augments. Even where augments are legal and accepted, these special features may not be readily available or may be restricted and subject to Availability rules at the discretion of the Referee. Options which increase the percentage cost of the augment are computed from the base cost with percentages added before multiplication of the cost.

DETACHABLE

Only available to external cybernetic augments (such as limbs and eyes), this allows the Traveller to disconnect the augment using a specialised socket. This can be done for storage, disguise or to allow multiple augments to fit into the same socket. The disconnection process requires a Major Action, as does reconnection. While disconnected, the detachable augment is nothing more than another piece of equipment and has no connection to the Traveller at all.

Option	TL	Effect	Cost
Detachable	9	Removable via socket	+Cr5000, +25% of augment

However, in addition to the option listed above, a detachable augment may be able to operate separate from the Traveller's body for an additional Cr10000. Additionally, this augment has a grav locomotion option, allowing the augment to be controlled while detached and operated as a grav-propelled object capable of six metres movement per Minor Action. This movement range is restricted to the communications range between the interface and the augment, which is a 50 metre wireless data link unless the controller and augment have better transceivers installed.

Option	TL	Effect	Cost
Remotely-operated detachable augment	11	Augment remote control	+Cr10000
Grav-propelled detachable augment	13	Grav-propelled remote control	+Cr10000, +200% of augment

INVISITECH

The augment is made from materials which will not trigger an alert on a scanner, sensor or mechanostatic listener. Other than medical examination or direct visual contact with the augment, there is no electronic way to sense its presence. At TL16, invisitech also fools psionic scanning such as clairvoyance.

Option	TL	Effect	Cost
Invisitech	12	Undetectable by electronic scanners	+100% of augment
Invisitech	16	+Psionic scanning	+200% of augment

NATURAL-LOOKING

Adding a layer of synthetic skin and hair over a cybernetic augment can help make it seem more organic and lifelike at a passing glance. This helps the augment blend in with the rest of the Traveller's body, granting DM+2 to all Deception checks made to hide the augment. At TL14, this bonus is increased to DM+4.

Option	TL	Effect	Cost
Natural-looking	10	DM+2 to all Deception checks	+25% of augment
Natural-looking	14	DM+4 to all Deception checks	+75% of augment

RUGGEDISED

All circuitry and electronic components in the augment have been shielded against outside energies. This makes the augment immune to energy-based weaponry that targets augments and weapons that have adverse effects based on cybernetic augments such as electromagnetic pulse grenades or ion weapons.

Option	TL	Effect	Cost
Ruggedised	8	Immune to EM and ion attacks	+25% of augment

SELF-REPAIRING

The augment comes standard with a self-repair mechanism, using nanites, protein coating or some other method. Instead of requiring special attention by a cyberdoc, geneticist or bionicist, the augment heals like any other part of the body when damaged.

Option	TL	Effect	Cost
Self-repairing	14	Heals naturally	+100% of augment

TORSO

ADDITIONAL MANIPULATOR

The addition of a segmented tentacle-like appendage can be useful in situations where the Traveller requires a third hand. Built with polymer plastics and non-ferrous alloys, the appendage is attached between two of the Traveller's ribs, along the lateral side of their body. The appendage can collapse or extend from 20 centimetres to a full metre in length. It is only a few centimetres in circumference but ends in a tiny collapsible claw capable of remarkable manual control. Only one additional manipulator can be added to each side of the body without restricting lung capacity. The basic version has STR 6 and DEX 10 but more advanced versions have greater capabilities.

Additional Manipulator	TL	Effect	Cost
Basic	10	STR 6, DEX 10	Cr7500
Improved	12	STR 9, DEX 12	Cr15000
Advanced	14	STR 9, DEX 15	Cr25000

ALL-TEMPERATURE EPIDERMAL SYMBIOTE

This augment is a lifeform related to both viruses and bacteria and is injected into the Traveller's body. Sweating is the body's temperature regulation system but it has limitations. By adding this augment, the Traveller produces several varying levels of chemical sweat, cooling down and heating up the body to remain at a perfect body temperature. This augment allows the Traveller to ignore cold or heat from -30° to +50°C, although it is ineffective in temperatures outside this range. It also reduces the amount of liquid consumption required per day by 20%. This augmentation is biological and not affected by electromagnetic attacks.

Augment	TL	Effect	Cost
All-Temperature Epidermal Symbiote	14	Ignore temperature effects -30° to +50°C, reduce liquid requirements by 20%	Cr2500

ALTERED APPEARANCE

In some situations, a Traveller might find it prudent to permanently alter their appearance. Legitimate reasons for such procedures abound but often this augment occurs in unlicensed locations aided by the transfer of untraceable funds (assume 5-10, or 4+1D x standard cost); in those situations, the surgeon or geneticist performing the procedure must succeed at a Difficult (10+) check with the relevant skills and characteristic bonus. Negative Effects are at the discretion of the Referee.

At TL6, this augment is essentially plastic surgery. It can alter facial appearance, gender and make moderate changes to a person's build. Such changes will fool a visual inspection or even facial recognition systems but will have no effect on other biometric scans including fingerprint readers, retinal scans and genetic scanners. To fool all but genetic scanners, the TL9 procedure can use transplanted eyes, laser sculpted fingerprints, melanin alterations and more advanced surgery, changing height by up to 10 centimetres in either direction by using bone grafts or removal. At TL12, retroviral techniques can change a person's DNA to an extent that identification is impossible. This advanced procedure is illegal for private citizens on most worlds and is subject to the same risks of multiple adaptions as detailed for the genetic environmental adaption augment (see page 52). Altered appearance augmentations are not affected by attacks such as electromagnetic pulses.

Altered Appearance	TL	Effect	Cost
Basic	6	Plastic surgery	Cr10000
Improved	9	+Whole Body Transformation	Cr50000
Advanced	12	+Genetic Alteration	Cr200000

BIOTECH

For most civilisations in Charted Space biotech is not a default technology but is available at TL16, allowing the creation of purely biological enhancements. These have the same effects as normal augmentations but involve the implantation of 'natural' organs to achieve them. Some civilisations in Charted Space or cultures in other universes may have biotech options as standard at lower Tech Levels.

Biotech augmentations effectively have the Invisitech, Natural-looking and Ruggedised options by default with a total +300% increase in cost. Additional options add to this cost multiplier. Biotech augments are not Self-repairing by default: a wound might heal but a severed finger or damaged eye will still need special attention to repair.

Option	TL	Effect	Cost
Biotech	16	Invisitech, Natural-looking, Ruggedised	+300% of augment

In universes where biotech is more common, a basic biotech augment will have these options at the Tech Level of introduction for the augment but still have option costs for these features which equal +150% for basic versions and up to +300% for more advanced versions of Invisitech and Natural-looking options.

BIO-FUSION POWER PORT

This cybernetic augment is a small caloric generator built into the rib cage. Provided the Traveller consumes six times the normal caloric intake daily, the power port will produce enough energy to serve as a power source for an energy pistol, producing 50 shots daily.

Augment	TL	Effect	Cost
Bio-fusion Power Port	13	Power source for energy pistol	Cr10000

CARDIOTRIGGER DETONATOR

The cardiotrigger detonator, or 'dead man's bomb', is not often an augmentation a Traveller will willingly install. Typically used by terrorist organisations, rogue governments and the occasional sociopath, this augment links a single explosive device to the heart rate of the Traveller. If the Traveller's heart ever stops beating, the bomb will detonate 2D seconds later. The Tech Level and cost of the cardiotrigger detonator is reliant upon the type of explosive used (see page 159), adding +1 to the device's Tech Level and multiplying its cost by 10 times the cost of the explosive charge. The cardiotrigger detonator is a Category 5 item in the rare instances when legally sanctioned.

Augment	TL	Effect	Cost
Cardiotrigger Detonator	7+	Heart-triggered dead-man's bomb	Special

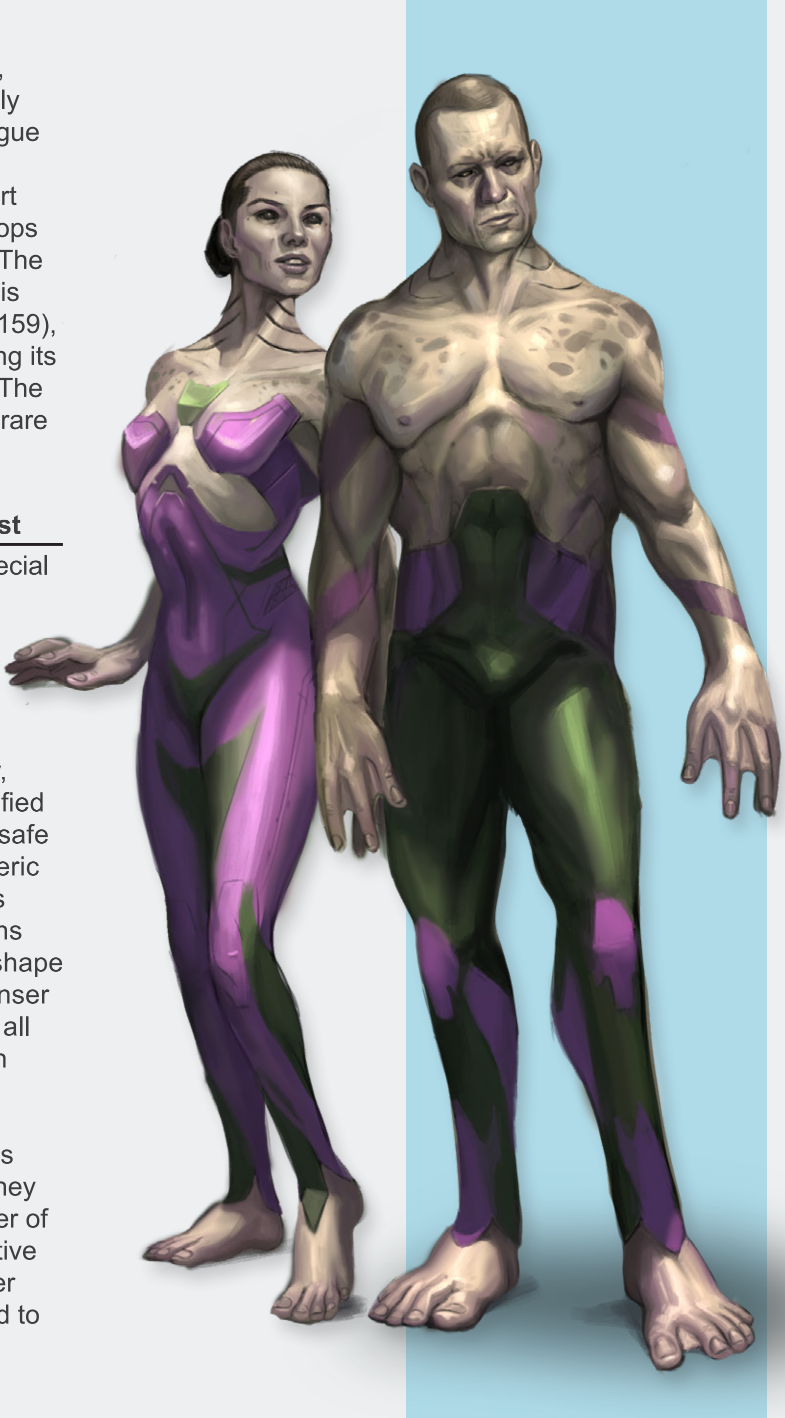
GENETIC AQUAMORPH ADAPTION

This genetic alteration transforms the recipient into an amphibious being, able to function both on land and under water indefinitely, with some restrictions. Aquamorphs acquire modified gills to allow indefinite breathing underwater to a safe limit of 30 metres on worlds of standard atmospheric pressure and gravity conditions. They can dive as deep as 100 metres if they take proper precautions against nitrogen narcosis. Modifications to body shape include enlarged webbed hands and feet, and denser body fat. Underwater, aquamorphs gain DM+2 to all Recon checks (and suffer DM-2 on land) and gain DM+2 for all checks related to swimming.

Survival on land is possible as long as aquamorphs keep their skin moist and remain well hydrated – they require twice the water intake of a baseline member of their species – six litres per day for humans. Effective STR is halved while on land. Both while underwater and in microgravity, all aquamorphs are considered to have Athletics (dexterity) skill of at least 0.

This genetic modification is subject to the same risks of multiple adaptions as detailed for the Genetic Environmental Adaption augment (see page 52). Genetic aquamorph augmentations are not affected by electromagnetic attacks or detectable by electronic means.

Augment	TL	Effect	Cost
Genetic Aquamorph Adaption	12	Amphibious adaptation (see above)	Cr30000



GENETIC ENVIRONMENTAL ADAPTION

While some worlds require minimal adaption to survive, perhaps just a few weeks to get used to changes in air density and gravity, others are less hospitable to unadjusted persons. Those who make these 'marginally habitable' worlds home may seek out genetic modifications to adapt to local conditions and forego the need for masks or protective clothing. Environmental adaptions are usually specific to a world but can include one or more of the following factors:

- **Atmospheric Taint and/or Pressure:** Atmospheres 4, 5, 7, 8 and 9.
- **Temperature:** Either heat (up to 60°C) or cold (down to -10°C).
- **Humidity:** Usually for arid conditions, halving liquid intake requirements.
- **Gravity:** Either high (1.4–1.8G) or low (0.2–0.7G).

Protection from Taint may be limited by the nature of the specific taint. Also, atmospheric adaptions to better support a Dense or Thin atmosphere will cause the opposite density to have more severe effects – a Dense adaptation will treat Thin atmospheres as Very Thin and vice versa. A Dense adaptation will allow better tolerance of Very Dense atmospheres and a Thin adaptation will allow better survival times in Very Thin atmospheres.

Each of these is considered a separate modification in terms of cost but as they are tailored for a specific world, they involve one medical procedure and count as a single modification in terms of risk. Governments seeking new colonists may subsidise the cost of a procedure specific to their world.

General modifications to these are also available. Unlike the world-specific version, one general atmospheric adaptation can provide taint adaption or pressure adaption, but not both. Taint adaption provides protection from a variety of tainted environments with regards to particulates, pollutants and atmosphere gas mix but will not necessarily provide protection from biological or other unusual taints as a world-specific adaption would.

Multiple applications of environmental genetic adaptions are possible, although several world-specific adaptions to differing conditions may render one or more of these adaptions useless or worse. Contradictory temperature and gravity modifications are not allowed. For each modification beyond the first to take hold, the recipient must succeed in an Average (8+) END check, with each adaption – including the first and the new attempt– causing DM-1. A failed check inflicts damage equal to 1D times the negative Effect, and prevents the new modification from taking hold, but it counts as an adaption for DMs to subsequent attempts.

Undoing an environmental genetic adaption requires a procedure equivalent in cost and risk to applying an additional adaption. These genetic changes are permanent and inheritable, usually as dominant traits, and are not affected by attacks such as electromagnetic pulses or detectable by electronic means.

Augment	TL	Effect	Cost
Genetic Environmental Adaption	12	Adaptation to a world or factor	Cr50000

GENETIC MICROGRAVITY ADAPTION

Most worlds with very low or non-existent gravity compensate by keeping habitats at reasonable gravity levels, whether through gravity plates or by spinning all or portions of the habitat. Certain occupations and cultures forego these methods by choice or necessity. Rather than suffer the health effects of long-term living in a microgravity environment, some use genetic alterations to modify their bodies to thrive. This type of alteration has both benefits and drawbacks.

A person who has undergone genetic microgravity adaption suffers no ill effects from prolonged exposure to environments of less than 0.2G. They are also supremely adapted to this environment; all recipients are considered to have Athletics (dexterity) 2 (or +2 if they already possess the skill) for actions in microgravity. Recipients also receive DEX+1. The modifications to prevent muscular atrophy also grant STR+1.

The downsides of this modification include receiving END-1 and susceptibility to fatigue in higher gravity environments. Worlds of 0.7G or more are considered high gravity and adaption requires twice as long as an unaugmented person. In these environments, all Athletics tasks are performed at DM-1 and any direct checks against STR, DEX and END receive DM-1.

This genetic modification is subject to the same risks of multiple adaptions as detailed for the genetic environmental adaption augment. Genetic microgravity adaption augmentations are not affected by electromagnetic attacks or detectable by electronic means.

Augment	TL	Effect	Cost
Genetic Microgravity Adaption	12	Adaptation to microgravity (see above), STR +1, DEX +1, END -1	Cr30000

INTERNAL AUTO-INJECTOR

This implant holds a dose of drugs (decided at time of implant) to be automatically administered according to a predefined trigger event. More advanced versions can be purchased, with each increase in TL adding Cr5000 to the cost and allowing for two additional doses with specific triggering events for each drug.

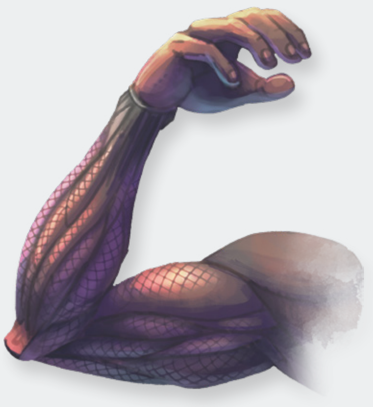
Augment	TL	Effect	Cost
Internal Auto-injector	10	Conditional drug release mechanism	Cr10000

METASTATIC PLATELET INJECTION

This augment is an injection of super-powered clotting cells which bond with the body's existing platelet production cells. The platelets reproduce extremely rapidly when active, sealing wounds quickly. The scabs and scars they leave are always a pasty blue in colour however, a sign of the artificial proteins in their construction. These platelets double characteristic points gained through natural healing and are not affected by electromagnetic attacks or detectable by electronic means.

Augment	TL	Effect	Cost
Metastatic Platelet Injection	12	Doubles natural healing rate	Cr25000

MUSCULAR BRIDGING



Through surgery and a long, painful recovery process lasting 1D weeks, this augment adds thousands of microscopic protein strings to the Traveller's muscular system. Making every muscle stronger and more flexible, this increases the Traveller's STR and DEX by +1 and movement by +3 metres per Minor Action. This augmentation is not affected by electromagnetic or detectable by electronic means.

Augment	TL	Effect	Cost
Muscular Bridging	13	STR +1, DEX +1, movement +3 metres	Cr250000

PHYSICAL AUGMENTATION

A Traveller's endurance, strength or reflexes can be increased by replacing motor neurons with faster synthetic cells, reinforcing bones or replacing organs with tougher vat-grown clones. Augmentations must be purchased for STR, DEX and END separately and only one augmentation for each characteristic may be installed at any one time. These are not upgradeable; a new augmentation must be installed to achieve a higher increase at a later date. This augmentation is not affected by electromagnetic attacks or detectable by electronic means.

Augment	TL	Effect	Cost
Physical Augmentation +1	11	+1 to STR, DEX or END	Cr500000
Physical Augmentation +2	12	+2 to STR, DEX or END	MCr1
Physical Augmentation +3	15	+3 to STR, DEX or END	MCr5

SOLDIER'S ORGAN PACKAGE

A combination of genetic alteration and bionic additions to the organ cavity, this extensive body augment was originally designed to create more efficient soldiers. It adds several redundant organs, improves existing ones and works in concert with the Traveller's biology to make them more efficient. The genetic and surgical processes are long, requiring 1D months of constant care and medical visits (or a like number of carefully supervised Slow Drug doses *and* 1D weeks of rehabilitation and acclimation) and a steady supply of anti-depressants, genetic stabilisers, pain-killers and basic antibiotics. This package is controversial and rarely performed outside authoritarian regimes, as it results in a DM-1 penalty to all aging checks and may affect a recipient's sanity. When the process is finished, the recipient has all of the following organ structures and effects:

- **Tri-Lung Capacity:** Delays suffocation by an additional 15 minutes.
- **Bi-Liver Complex:** Grants immunity to alcohol and most ingested toxins.
- **Adrenometer:** Allows 36 hours of wakefulness without penalty on a triple standard daily caloric intake.
- **Quad-Kidney Cycle:** Allows for survival on half normal water consumption.
- **Aortal Heart Bud:** Grants DM+2 to all END-based checks.

Augment	TL	Effect	Cost
Soldier's Organ Package	12	See above	MCr1.5

SMUGGLING CONTAINER

A portion of the Traveller's body is surgically modified to house a polymer pocket, covered by what appears like normal skin. Using a trigger, usually looking like a blemish or scar to open, the pocket can hold roughly five kilograms of mass but nothing larger than 20 centimetres in any dimension. Under normal circumstances, it requires a Difficult (10+) Investigate check (1D rounds, INT) to discover the container when closed. By default, it is considered to be Natural-looking (DM-2) and is not directly affected by electromagnetic attacks, although its contents are not so protected.

Augment	TL	Effect	Cost
Smuggling Container	8	Internally concealed container	Cr15000

SUBDERMAL ARMOUR

This augmentation adds a mesh of ballistic fibres to the skin and reinforces bones, providing the Traveller with extra armour. At higher Tech Levels, more advanced polymers and lightweight alloys line the Traveller's organs as well as skin. Subdermal armour is not upgradeable; a completely new augmentation must be installed to achieve greater Protection at a later date. Subdermal armour stacks with other protection (but not other subdermal armour) and is not affected by electromagnetic attacks but can be detected by electronic means.

Augment	TL	Effect	Cost
Subdermal Armour +1	10	Protection +1	Cr50000
Subdermal Armour +3	11	Protection +3	Cr100000
Subdermal Armour +4	12	Protection +4	Cr250000
Subdermal Armour +5	14	Protection +5	Cr500000

TERMINAL STABILISATION SYSTEM

This is a complex system that monitors all body functions and, upon sensing imminent death, immediately releases a potent mix of chemicals and nanobots designed to keep the Traveller alive, if not completely functional. When the Traveller is killed, the terminal stabilisation system immediately adds +1D END. If this is not sufficient to make the Traveller's END a positive figure, death will still occur.

Augment	TL	Effect	Cost
Terminal Stabilisation System	16	See above	MCr2.5

VIDEO TATTOO

Some or all of the skin can be injected by configurable pigment particles, allowing for a tattoo design controlled through an interface built into the tattoo itself or by a voice or data link. These patterns switch between static or full-motion and allow the tattooed individual to change skin colour to any tone or even to a camouflage pattern, potentially allowing DM+2 to Stealth checks if the entire camouflaged body is exposed.

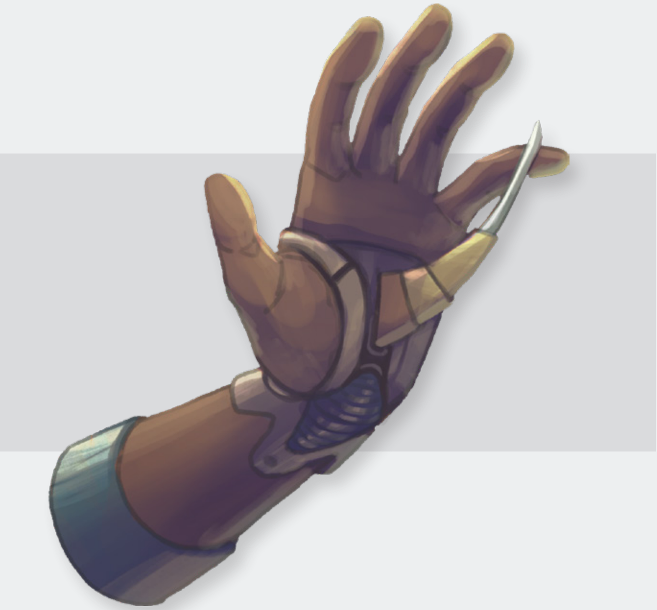
Augment	TL	Effect	Cost
Video Tattoo Controller	12	Controls video tattoo for limb or body	Cr20000
Video Tattoo (limb)	12	Covers one limb, head, or half a torso	Cr20000
Video Tattoo (full body)	12	Covers entire body	Cr120000

LIMBS

ASLAN CYBER-CLAW

This augment is normally only available in Aslan cultural regions. The jointed metacarpal of the Traveller is replaced by a cybernetic mechanism and polymer sheath holding a retractable claw, similar to the natural weapon of an Aslan. With a subtle flick of the wrist the mechanism locks or unlocks the eight-centimetre-long steel claw, allowing it to be used as a deadly weapon. Some Aslan have had their natural dew-claws replaced with these as a sign of their militant mentality or to replace damaged dewclaws but most are adopted by humans trying to integrate themselves into male Aslan circles. This base augment may be upgraded with Claw Coating (Edging and Hardening options available to Aslan as described in *Aliens of Charted Space: Volume 1* page 58), but does one point less damage per damage dice than the Aslan versions.

Weapon	TL	Range	Damage	Cost	Traits
Aslan Cyber-claw	9	Melee	1D+1	Cr10000	—



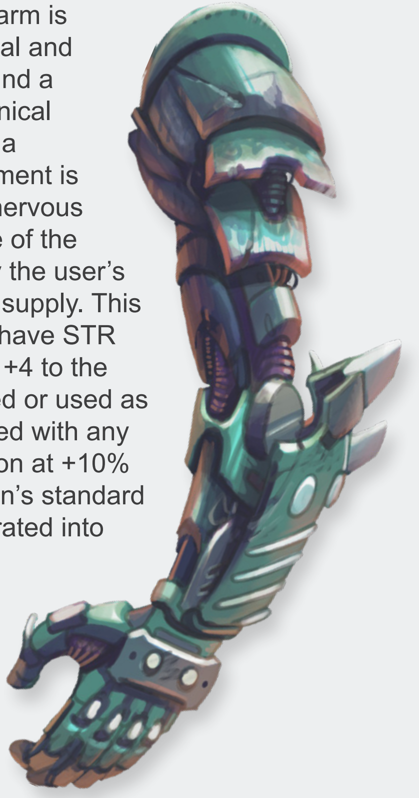
AUTONOMOUS LOCOMOTION RIG (ALR)

A strange but useful augment, the ALR is a series of hardwired connections from the spine to the legs tied to rudimentary sensors and a dedicated computer. The Traveller can ‘program’ their legs to carry them to a specific location, regardless of their state of consciousness. Tired, wounded, drunk or even asleep, the ALR will force the Traveller’s legs to walk to the specified location. The ALR automatically stops to avoid collisions with dangerous objects (moving traffic or sheer cliffs).

Augment	TL	Effect	Cost
Autonomous Locomotion Rig (ALR)	9	Auto-walk to specified destination	Cr15000

COMBAT ARM

One of the first combat implants developed, the basic cybernetic combat arm is an armoured metallic limb designed for combat. Noticeably oversized compared to a human arm, this augment grafts to the existing bone structure of the Traveller and is powered by small power cells, keeping the arm active for 300 standard hours before needing to recharge. The arm has STR 12, grants Protection +2 to the arm if it is directly attacked or if used as a shield. It can be fitted with any melee weapon at +10% more than the weapon’s standard cost.



At TL11, the combat arm is constructed from metal and polymer plastics around a more efficient mechanical core. Still larger than a human arm, this augment is fully attached to the nervous and skeletal structure of the user and is fuelled by the user’s own biomass energy supply. This arm is considered to have STR 15, grants Protection +4 to the arm if directly attacked or used as a shield. It can be fitted with any melee or pistol weapon at +10% more than the weapon’s standard cost. Any pistol integrated into the arm will have an external port for magazines or power packs.

At TL13, a slimmer arm is made almost completely from non-ferrous alloys, advanced plastics and super-conductive circuits. This arm is considered to have STR 18, grants Protection +6 to the arm if directly attacked or used as a shield and can be fitted with weapons in the same manner as the TL11 arm.

Combat arms can absorb 10 points of damage before being destroyed. They require repairs if damaged at 10% of the arm’s initial cost per point of damage. These arms are standard cybernetic models. Custom cybernetic arms (and legs and sensory organs) can be designed using Cyborg rules from the *Robot Handbook*. These custom implants may be available from some suppliers but are often special-order items priced at a premium, if available at all.

Combat Arm	TL	Effect	Cost
Basic	8	STR 12, Protection +2 shield, melee weapon fitting	Cr25000
Improved	11	STR 15, Protection +4 shield, melee or pistol fitting	Cr50000
Advanced	13	STR 18, Protection +6 shield, melee or pistol fitting	Cr75000

ENHANCED MOBILITY

The Traveller has both legs modified to move faster with greater stability. The basic version adds 1.5 metres to the distance the Traveller can move with a Minor Action. Additionally, all checks based on balance or ambulatory reflexes are made with DM+1.

At TL11, internal chemical pumps and fatigue-resistant fibres are added, greatly increasing ground speed and agility. This augment adds three metres to the distance the Traveller moves with a Minor Action and all checks based on balance or ambulatory reflexes are made with DM+2.

At TL13, this augment is made from superior materials designed to maximise efficiency and stability. This adds six metres to the distance the Traveller moves with a Minor Action and all checks based on balance or ambulatory reflexes are made with DM+3.

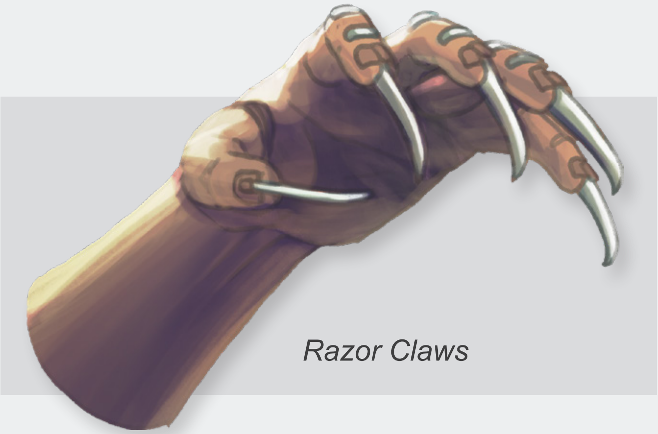
As with Combat Arms, these cybernetic options represent standard models. The *Robot Handbook* cyborg rules allow for custom cybernetic legs, although availability may be limited.

Enhanced Mobility	TL	Effect	Cost
Basic	8	+1.5 metre movement, DM+1 to relevant checks	Cr10000
Improved	11	+3 metre movement, DM+2 to relevant checks	Cr15000
Advanced	13	+6 metre movement, DM+3 to relevant checks	Cr25000

RAZOR CLAWS

Imbedded claws designed to retract under the fingernails are strong enough to cut steel. At higher Tech Levels, increasingly sharp edges cut through harder substances. The claws are adjustable, extending as far as five centimetres from the fingertips, allowing attacks to cause deep wounds and rip deep into bodies and machinery. At TL13 these are monofilament sharp, and at TL15 they are enhanced with an arc-field whose blue glowing energy cannot be parried by anything below TL14, but which, drawing energy from the body, cannot be used for more than 10 combat rounds per day; once the Traveller's power is expended, these claws revert to basic functionality.

Razor Claw	TL	Effect	Cost
Basic	11	Crystaliron Claws: As melee weapon: 2D, AP 3	Cr20000
Improved	13	Monofilament Claws: As melee weapon: 2D, AP 8	Cr35000
Advanced	15	Arc-field Claws: As melee weapon: 4D, AP 20	Cr50000


Razor Claws

PROSTHETIC LIMB

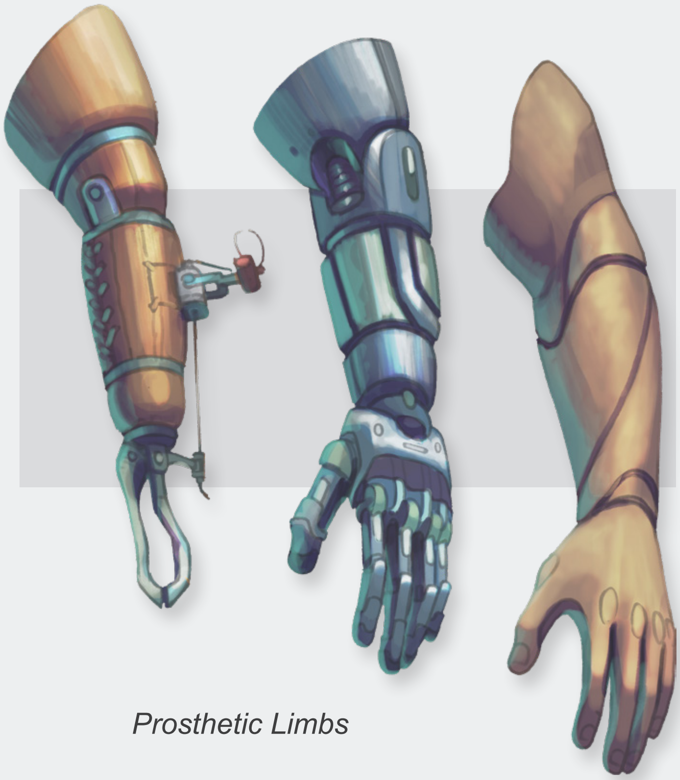
A prosthetic replacement limb or hand provides no exceptional abilities but does restore at least some functionality to compensate for the loss of an original limb.

A primitive prosthetic is available at TL2 and is available in prototype form as early as TL1. Oftentimes a length of wood to make up for a lost leg or bent hook of metal to serve as a makeshift hand, these prosthetics are awkwardly inefficient as a replacement. The fitting of a crude prosthetic requires a Difficult (10+) Medic check (1D hours, EDU). If the procedure involves amputation of the damaged limb, a failed check indicates the recipient will die during the procedure (or optionally, suffer 3D damage for each negative Effect). If the failed attempt involves replacement of a previously amputated limb, the procedure fails and another attempt must be made with a new prosthetic. Although these allow the Traveller to replace a limb, they are not utilitarian and suffer DM-2 on all DEX-based checks using that limb. This augmentation is not affected by electromagnetic attacks but detection is trivial by casual visual inspection.

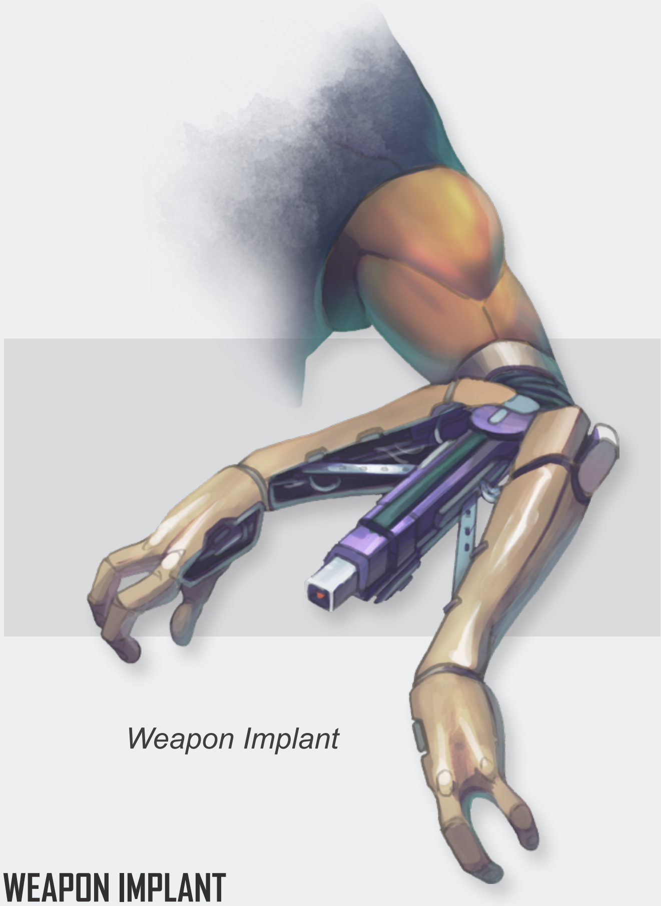
A basic prosthetic is built with better grade alloys and plastics. Attachment relies on standard and safe medical procedures, although initial surgical stabilisation of serious wounds still carries standard risks. These prosthetic limbs and hands are shaped like a real body part and allow somewhat competent use after a rehabilitation period of 1D+2 weeks. This prosthetic inflicts DM-1 to all DEX-based checks that require its use. This augmentation is not affected by electromagnetic attacks but is detectable as artificial.

An improved prosthetic uses robotic parts and nerve-connected biofeedback that allow it to function identically to a lost limb. After a 1D+2 week rehabilitation period, the Traveller is able to perform DEX-based checks with no penalty. This prosthetic is affected by electromagnetic pulses and while still detectable as artificial, it can be disguised by adding Natural-looking and Invisitech options.

Prosthetic Limb	TL	Effect	Cost
Primitive	2	DM-2 on DEX-based checks using limb	Cr100
Basic	7	DM-1 on DEX-based checks using limb	Cr250
Improved	9	No DEX penalty	Cr5000



Prosthetic Limbs



Weapon Implant

WEAPON IMPLANT

One of the Traveller's hands and forearm is replaced with a lifelike framework of alloy and polymers which has a hidden hinged split built within it. Opening in two halves, from between the middle and ring fingers to the elbow, the implant hides a small weapon shielded from most scanners (those of TL12 and lower). The weapon is modified to fit the implant and operates on nervous impulse but is otherwise the same as its common counterpart. This implant includes the cost of the custom weapon and any required magazine or power pack. Reloading requires insertion of individual ammunition into the magazine or external links to a power source. Subject to Availability, weapons may be upgraded at implantation time only to similar-sized items at cost of five times the base cost in addition to the cost of the standard implant. Note that a ranged stunner is considered an upgrade from a laser pistol, not a stunstick.

Weapon Implant	TL	Effect	Cost
Weapon Implant - Dagger	10	See text	Cr5000
Weapon Implant - Stunstick	10	See text	Cr10000
Weapon Implant - Auto Pistol	10	See text	Cr12000
Weapon Implant - Laser Pistol	11	See text	Cr25000

HEAD

ASSISTED AMBULATION

By adding tiny stimulatory conduits in the brain and certain muscles and tendons, a Traveller's body can be 'programmed' to function more efficiently for longer. Using electricity generated from an internal battery system which recharges using the Traveller's own diet, the body can function at peak physical capability for hours longer than normal. At TL13, the Traveller requires three times the standard food intake but can operate normally on four hours of sleep. This drops to twice the food intake and two hours of sleep at TL14 and at TL15 reaches +50% food intake and one hour of sleep.

Assisted Ambulation	TL	Effect	Cost
Basic	13	Only 4 hours sleep required at 3x caloric intake	Cr100000
Improved	14	Only 2 hours sleep required at 2x caloric intake	Cr300000
Advanced	15	Only 1 hour sleep required at 1.5x caloric intake	Cr500000

BALLISTIC TRACKING LENSES

The Traveller's retinas are laced with tiny receptors, outlining any object targeted by the Traveller's weapon. Ballistic tracking lenses grant the Traveller DM+1 on all ranged attacks where they can physically see the target but cannot be combined with scopes or other sighting aids. The Traveller's eyes shine strangely in direct lighting, revealing the device to observers.

Augment	TL	Effect	Cost
Ballistic Tracking Lenses	11	DM+1 on unassisted ranged attacks	Cr8000

COCKPIT SENSORY SUITE

An augment sometimes given to high-G fighter pilots and other fast-vehicle drivers, this alteration thickens the membranes of the eye, speeds hand-to-eye co-ordination and enhances blood flow to the brain when under high pressure or stress. This augment grants DM+1 to all Pilot, Drive, Flyer and Seafarer checks made when travelling at high speeds.

Augment	TL	Effect	Cost
Cockpit Sensory Suite	10	DM+1 on high-speed checks	Cr500000

COGNITIVE AUGMENTATION

Replacing slow nerve cells with faster synthetic substrates and implanting optoelectronic boosters can increase the speed at which a Traveller thinks, effectively boosting their intelligence. Note that Cognitive Augmentation is subject to electromagnetic attacks unless Ruggedised.

Augment	TL	Effect	Cost
Cognitive Augmentation +1	12	+1 to INT	Cr500000
Cognitive Augmentation +2	14	+2 to INT	MCr1
Cognitive Augmentation +3	16	+3 to INT	MCr5

COMPLEX CRANIAL PROCESSING UNIT

Effectively a biological computer integrated with higher brain functions, this processing unit automatically activates when the Traveller begins considering complex calculations. This grants DM+1 to all checks (typically Science-related) that involve complicated mathematics. This augment is compatible with Cognitive Augmentation but is not affected by electromagnetic attacks.

Augment	TL	Effect	Cost
Complex Cranial Processing Unit	14	DM+1 to complex Science checks	Cr350000

ENHANCED VISION

A Traveller can be implanted with cybernetic eyes, giving them the permanent functionality of binoculars and IR/Light Intensifier goggles (see pages 73-75). At TL14, the Traveller can also see into and beyond the ultraviolet spectrum and emulate the effects of PRIS binoculars (see page 76).

Enhanced Vision	TL	Effect	Cost
Basic	13	Binocular zoom, IR/Light Intensifier	Cr25000
Improved	14	PRIS binocular functionality	Cr50000

FABULOUS AUGMENTATION TREATMENT

This full-scale treatment concentrates on the head but the whole body is considered. Small adjustments are made to the Traveller's figure and posture, facial features are adjusted and the social interaction areas of the brain are biologically enhanced. The effect makes the Traveller a delight at any function, granting DM+1 to checks involving social interaction. A lot of higher-class socialites often seem as if they are just better people than those below them – this treatment is why. This augmentation is not affected by electromagnetic attacks or detectable by electronic means.

Augment	TL	Effect	Cost
Fabulous Augmentation Treatment	15	DM+1 to all social interaction checks	MCr3.5

MECHANOSTATIC SCANNER

This augments one of the Traveller's ears with a manually activated device similar to a communications scanner. When activated, any individuals within 20 metres with augments detectable by electronic means give off a traceable buzz audible only to the Traveller. For most augments – except those normally undetectable – this is automatic but for those of higher TL, the scanner must make an Easy (4+) check with a negative DM equal to the TL difference.

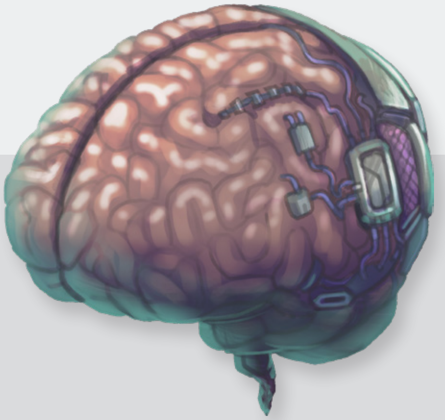
Augment	TL	Effect	Cost
Mechanostatic Scanner	13	Detects augments	Cr10000

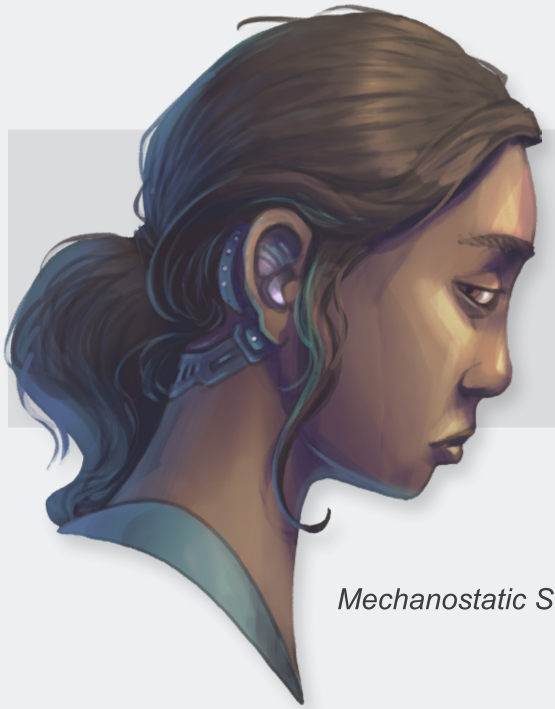
NEURAL COMM

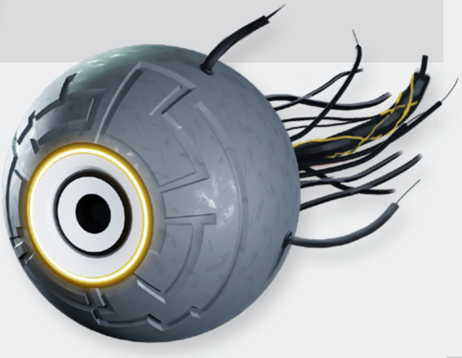
A neural comm connects the Traveller's brain to a communications device. A neural comm has identical capacities to a mobile comm (see page 63) but the cost is much higher, as is the required Tech Level. At TL10 this connection is to the Traveller's hearing and speech centres allowing verbal communications by thought alone. At TL12, links to the visual cortex allow a full overlay of augmented reality information and other visual data, including input from HUD devices without the need for a display unit. At TL14, further integration allows interface to the Travellers full sensory apparatus, allowing emulated sensations of smell, taste and touch and increased computing capability.

A Traveller can access a neural comm by thought alone but its complicated activities still require an Electronics (comms) or Electronics (computers) check. By default, the transceiver has a five kilometre range but it can link to a more powerful transceiver relay and act as a thought-controlled terminal to a more powerful computer within range.

Neural Comm	TL	Effect	Cost
Basic	10	Audio only	Cr1000
Improved	12	Audio/Visual, Computer/0	Cr5000
Enhanced	14	Multiple forms of data, Computer/1	Cr20000
Advanced	15	Multiple forms of data, Computer/2	Cr25000


Neural Comm


Mechanostatic Scanner


Enhanced Vision

NEURAL LINK

A neural link is a more complex form of neural comm. In addition to providing all the capabilities of a neural comm available at its Tech Level, it allows the computer system access to the Traveller's nervous system, allowing a connected wafer jack (see page 61) or computer system to grant physical skills in addition to those based on INT or EDU. A Traveller must connect the neural link to a computer system or wafer jack containing appropriate Expert software to use the skill.

Augment	TL	Effect	Cost
Neural Link	13+	Neural Comm + nervous system access	Cr30000

NEURAL JACK

A combination of wafer jack (see page 61) and neural link (see above), a neural jack can be used with Expert programs involving both physical and mental characteristics. A neural jack matches the capabilities of a neural link and wafer jack of its Tech Level.

Augment	TL	Effect	Cost
Neural Jack	13+	Neural Link + Wafer Jack/8	Cr50000

NERVE-PLUG RESPONSE RIG

Similar to the connection used in a neural link, this cybernetic suite consists of six ports implanted along the spine. These ports attach to specially-designed slave-pins added to any suit of powered armour or battle dress. Adding the slave-pin rigs to the suit adds +50% to the cost of the suit. When plugged into the Traveller's ports (when they don the armour), it becomes attuned to their natural nervous reactions and movements. Essentially, the Traveller becomes their armour. This grants DM+2 to all DEX-based checks in addition to any DEX increases provided by the powered armour.

Augment	TL	Effect	Cost
Nerve-plug Response Rig	13	DM+2 to all DEX-based checks in the suit	Cr225000*

NULL SKULL

A dangerous and expensive process to undergo, the Traveller has the majority of the skull's bone tissue replaced with psionic dampening metals. This reduces PSI to 0 but inflicts DM-6 upon any psionic skills used directly against them.

Augment	TL	Effect	Cost
Null Skull	16	PSI 0 but DM-6 to psionic effects	MCr1

PERIPHERAL VISION ENHANCEMENT

This augment enhances the depth and acuity of standard, far and mid-peripheral vision. It confers DM+1 bonus to Initiative rolls and Recon checks made to spot unusual or hidden objects.

Augment	TL	Effect	Cost
Peripheral Vision Enhancement	10	DM+1 to Initiative and Recon checks	Cr50000

PSI-TAPS

These advanced cybernetic augments look like small crystalline windows mounted on either side of the Traveller's face, just above the temple. A portion of the skull is replaced with extremely durable psi-active crystals, stimulating the psionic portions of the brain. This augment adds +2 to the Traveller's PSI characteristic, to a maximum of 10. A Traveller may have multiple pairs of psi-taps, creating a circle of crystal augments around their skull.

Augment	TL	Effect	Cost
Psi-taps	16	PSI +2 to a maximum of 10	Cr750000

SHRIEKERBOX

A replacement to the Traveller's own vocal chords, the shriekerbox is an electronic magnifier and modulator. The basic shriekerbox can project the Traveller's own voice, to the volume of an electronic megaphone. Also, the Traveller can create discordant static to unsettle those around them. Not usable while the Traveller is speaking, this static feature inflicts DM-1 on all skill checks made by anyone within 15 metres who lacks ear protection. At TL12, an improved TL12 shriekerbox is also capable of mimicking any voice.

Shriekerbox	TL	Effect	Cost
Basic	10	Amplify voice and create static	Cr8000
Improved	12	+Mimic any voice	Cr16000

SKILL AUGMENTATION

The Traveller's nervous system is rewired to be more suited to a particular task. A pilot might have reflexes and sense of balance improved, for example, while a broker might become capable of controlling pupil responses and smelling alien pheromones and skin salinity. A skill augmentation grants the Traveller DM+1 when using that specific skill. A Traveller may only have one augmentation per skill and must possess the skill at level 0 or more to benefit from it. Three different skill augmentations can be installed at any one time.

Augment	TL	Effect	Cost
Skill Augmentation	12	Skill+1 to any one skill of level 0+	Cr50000

VENOM GLANDS

This bionic augment requires the insertion of toxic salivary glands into the jawbone, making the saliva a potent necrotic toxin. The Traveller inflicts an additional D+3 points of damage whenever successfully biting a living creature. Users are immune to their own venom and bite victims with divergent biochemistries may not necessarily be affected by these glands.

Augment	TL	Effect	Cost
Venom Glands	11	Add D+3 points damage to bite attack	Cr10000

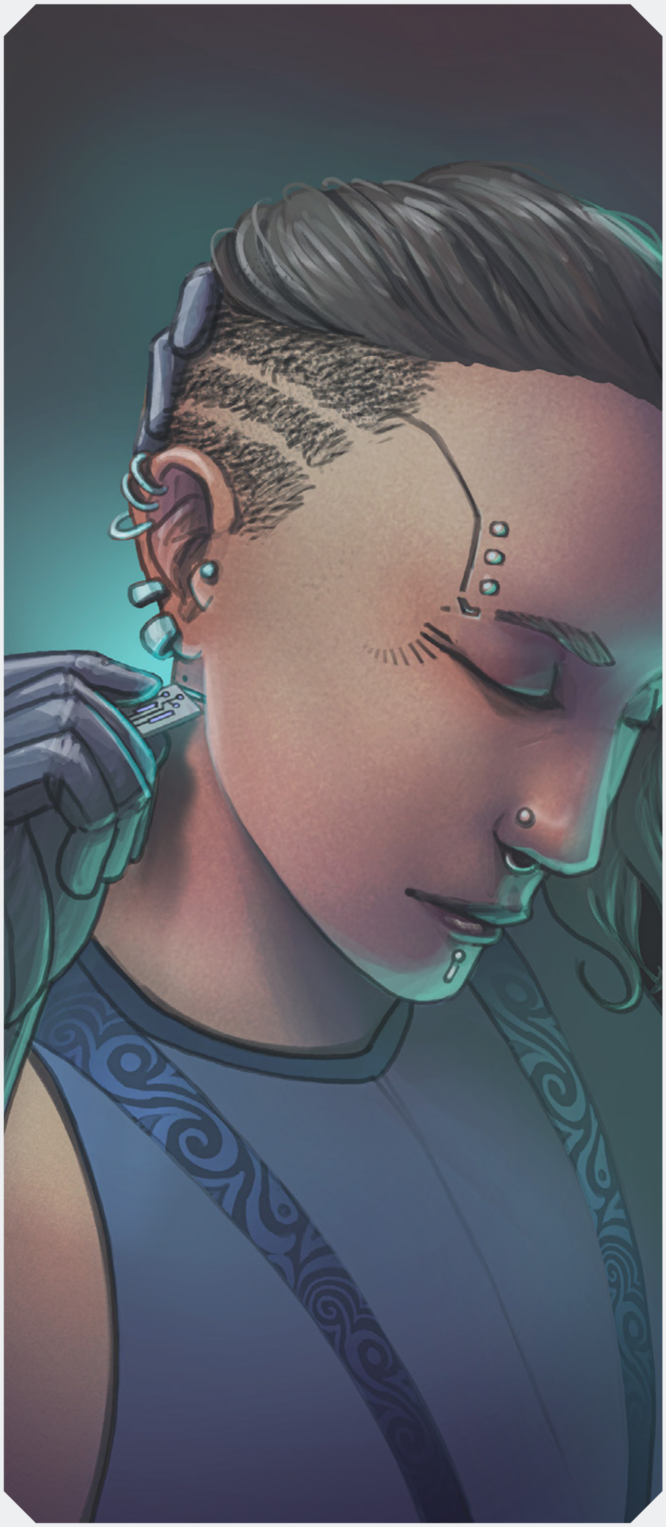
WAFER JACK

A wafer jack is a computer system implanted into the base of the skull that contains a physical data socket and a processor running an interface program. A Traveller with a wafer jack can use Expert programs for tasks relying on INT or EDU only. The main benefit is that it is much smaller and more discrete than a portable computer and the user can access the Expert program by thought alone. A wafer jack has a specialised Computer/2 for Expert programs only, always running Intelligence Interface.

The wafer jack's Intelligence Interface does not use any Bandwidth, so all available computer Bandwidth may be used for running one or two Expert software packages. Total storage capacity of physical data wafers is indicated by the wafer jack's total Bandwidth. Swapping out software is done with physical media and not possible in the heat of the moment.

The advanced wafer jack has a specialised Computer/3 capable of simultaneously running one, two or three Expert packages of total Bandwidth 3.

Wafer Jack	TL	Effect	Cost
Basic	12	Expert + Computer/2, Bandwidth 4	Cr10000
Improved	13	Expert + Computer/2, Bandwidth 8	Cr15000
Advanced	15	Expert + Computer/3, Bandwidth 12	Cr30000



COMMUNICATIONS

Communications technology rapidly merges with computerisation at higher Tech Levels. Above TL8 in most cultures, it is unthinkable to be out of touch except in the most remote areas, with even short-ranged devices able to connect to a planetary-wide communications grid.

RETROTECH VARIANTS

Communications devices are subject to the retrotech rules for electronics devices (see page 11). These rules allow for continued innovation to make these products cheaper and smaller for three subsequent Tech Levels. Cheap retrotech versions of items such as transceivers and mobile comms are available on most worlds which have an established local electronics industry or have access to offworld products and components.

BUG

Surveillance devices such as hidden microphones and tiny cameras, bugs are available from TL5 onwards. They rapidly miniaturise and become more intelligent. A TL14 bug can be no bigger than a dust mote. The smaller a bug however, the shorter its range – a bug that transmits data needs a much larger power supply than one that just records until collected.

TL	Features	Cost
5	Audio only	Cr50
7	Audio or Visual	Cr100
9	Audio or Visual or Data	Cr200
11	Audio/Visual/Data	Cr300
13	Audio/Visual/Data/Bioscan/Computer/0	Cr400
15	Audio/Visual/Data/Bioscan/Computer/1	Cr500

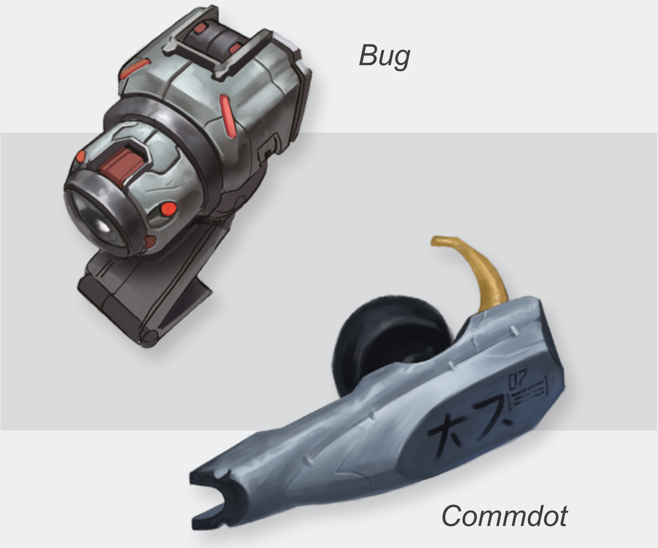
Audio: The bug records anything it hears.
Visual: The bug records anything it sees.
Data: If attached to a computer system, the bug can search and copy data from the computer. The bug cannot breach computer security on its own but if a user accesses the computer in the bug's presence, the bug can read the data.
Bioscan: The bug has a basic biological scanner, allowing it to sample the area for DNA traces, chemical taint and so forth – it collects the information but does no analysis.
Computer/x: The bug has an onboard computer system rated Computer/0 or /1, allowing use of simple Agent, Decryptor or Intrusion packages.

A bug can be active or passive. An active bug transmits data, either constantly or when triggered, whereas passive bugs just record until activated. Bugs can be linked to nearby transceivers and/or computers to further data, perform analysis or initiate hacking programs.

COMMDOT

A commdot is a tiny microphone/speaker and transmitter, ranging in size between a few centimetres and a few millimetres across. A commdot is capable of interfacing with another communications device and relaying messages back and forth. Commdots have a range of only a few metres and are usually used as hands-free communicators but can also be used as improvised bugs or throat microphones. At TL12 commdots are able to decipher and transmit subvocal communications and include a tiny nearly imperceptible earpiece to allow communications that are effectively silent.

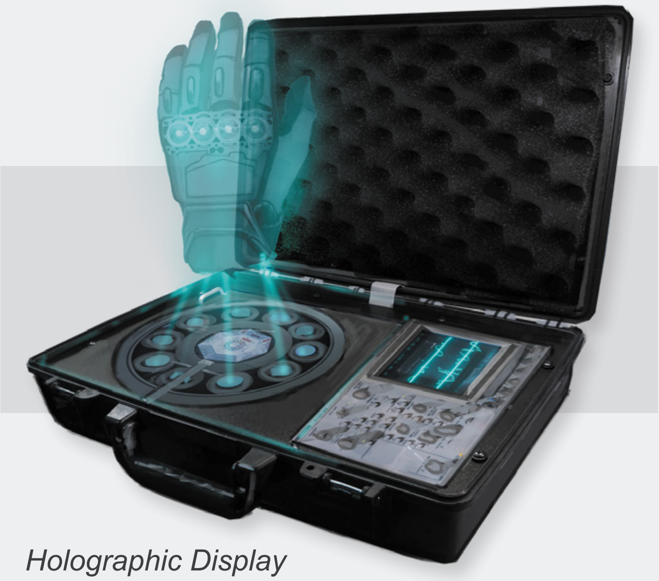
Commdot	TL	Effect	Cost
Basic	10	Hands-free vocal commentator	Cr10
Improved	12	Hands-free subvocal commentator	Cr10



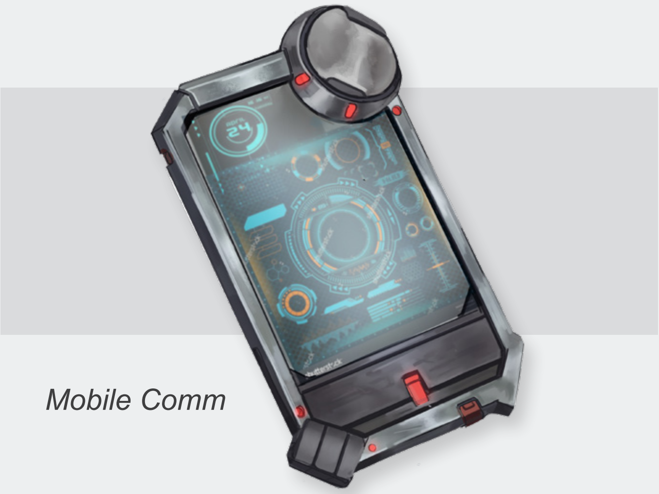
HOLOGRAPHIC DISPLAY

A Holographic display is a smaller version of a holographic projector. The display will create a three-dimensional image in the space above it, to a range of about 30 centimetres. These displays are often integrated into other devices, especially by TL12 when their mass becomes negligible. The properties of the holograms produced by the display are detailed in the holographic projector description.

Holographic Display	TL	Effect	Kg	Cost
Basic	9	Translucent moving holograph	2	Cr800
Improved	11	Realistic moving holograph	1	Cr1000
Enhanced	12	True-to-life moving holograph	—	Cr1000



Holographic Display



Mobile Comm

HOLOGRAPHIC PROJECTOR

A holographic projector is a briefcase-sized box that, when activated, creates a three-dimensional image in the space around it, to a range of three metres. When first introduced, the projected images are obviously not real and most often used for communication purposes. A holographic projector can be connected to any computer, comm unit or transceiver of TL9 or more. The improved version produces images realistic enough to fool anyone who fails an INT check, enhanced versions create true-to-life images, although they lack actual substance or smell. Advanced projectors are small enough to be installed as just another integral port on a hand-held electronic device.

Holographic Projector	TL	Effect	Kg	Cost
Basic	9	Translucent moving holograph	6	Cr1000
Improved	11	Realistic moving holograph	3	Cr2000
Enhanced	12	True-to-life moving holograph	1	Cr10000
Advanced	14	Small form-factor	—	Cr25000

MOBILE COMM

A mobile comm unit is a portable telecommunications device/computer/camera, ranging in size from a bulky handset to a slim watch or pen-like cylinder – in today's world we call them mobile phones or cell phones. Larger comms have physical controls and screens, while smaller units either project data and control displays onto nearby surfaces, have fold-out plastic screens or connect to cybernetics. Comms have only short-range transmission and reception capabilities – typically five kilometres – but most technologically advanced worlds have planetwide comm networks, allowing the user to send messages and access data anywhere. At higher Tech Levels, mobile comms merge entirely with portable computers (see page 67); a mobile comm of TL10 or greater will have the equivalent computing power of a portable computer available two Tech Levels earlier.

Mobile Comm	TL	Effect	Kg	Cost
Basic	6	Audio-only	—	Cr50
Improved	8	Audio and visual, Computer/0	—	Cr150
Advanced	10	Multiple forms of data, Computer/1	—	Cr500

TRANSCEIVER

A transceiver is a stand-alone communications device, in other words a two-way radio. Unlike a mobile comm, which mostly relies on the presence of an established communications network, a transceiver can send and receive often over much greater distances directly under its own power. Most transceivers are radio or laser-based. Meson communicators also exist but are generally not easily portable or available publicly.

To reach orbital ranges reliably, a transceiver requires a range of 500 kilometres. With increasing Tech Levels, transceivers tend to become both more powerful and more portable. Any transceiver with negligible mass can be added to another electronic device. At TL8 and above a five kilometre range transceiver is often included at no additional cost in most electronic devices. All transceivers at TL10–12 have integral Computer/0 functionality, and all at TL13+ have Computer/1 functionality.

While retrotech price reductions occur for up to three Tech Levels for all transceivers, powerful transceivers capable of planetary or greater range do not decrease in size past TL12 because they are limited by the requirements of power supplies and antennae.

Laser transceivers require line-of-sight to operate and are often restricted by the curvature of a planet or by atmospheric effects. The range listed is required for reliable surface-to-orbit communications but range in open space is only limited by diffraction effects which may allow for communications across interplanetary distances if precise location and tracking information for both the transmitter and the receiver are well known.

Laser transceivers decrease in mass and cost like other electronic devices but the higher Tech Level versions noted below have improvements in wavelength and data rates. A TL11 transceiver can reach interplanetary distances with video-quality data links and a TL13 transceiver can reach further and with more data, limited mostly by accuracy at pointing to a target far beyond a system's outer planets.

Laser Transceiver (TL)	Range	Kg	Cost
TL9	Regional (500km)	1.5	Cr2500
TL11	Regional (500km)	0.5	Cr1500
TL13	Regional (500km)	—	Cr500

Radio Transceiver (TL)	Range	Kg	Cost
TL5	Distant (5km)	20	Cr225
TL5	Very Distant (50km)	70	Cr750
TL5	Regional (500km)	150	Cr1500
TL5	Continental (5,000km)	300	Cr15000
TL5	Planetary (50,000km)	1,000	Cr500000
TL7	Distant (5km)	1	Cr100
TL7	Very Distant (50km)	5	Cr250
TL7	Regional (500km)	10	Cr500
TL7	Continental (5,000km)	20	Cr5000
TL7	Planetary (50,000km)	200	Cr50000
TL7	Interplanetary (500,000km)	2,000	Cr500000
TL8	Distant (5km)	—	Cr75
TL8	Very Distant (50km)	—	Cr500
TL9	Regional (500km)	—	Cr500
TL9	Continental (5,000km)	—	Cr5000
TL9	Planetary (50,000km)	10	Cr15000
TL9	Interplanetary (500,000km)	20	Cr30000
TL12	Continental (5,000km)	—	Cr500
TL12	Planetary (50,000km)	2	Cr2000
TL12	Interplanetary (500,000km)	5	Cr5000

Meson transceivers are bulky devices requiring fine-tuning and precise location information of communication nodes. They are almost impossible to jam or intercept and can communicate through solid rock or metal, making communications through the entire surface of a planet possible. Meson transceivers are normally restricted to government or military use and should be considered a Category 5 item available only with proper documentation or very good illicit connections. A meson communication stream may not be intercepted or interrupted unless blocked by a precisely positioned meson screen. Particle decay rates prevent meson communication links from exceeding 500,000 kilometres range except with the use of multi-MCr room-sized equipment.

Meson Transceiver (TL)	Range	Kg	Cost
TL12	Planetary (50,000km)	200	Cr50000
TL12	Interplanetary (500,000km)	500	Cr100000
TL14	Planetary (50,000km)	100	Cr25000
TL14	Interplanetary (500,000km)	200	Cr50000

TRANSCEIVER OPTIONS

Transceivers often include additional features, including computers, hardware encryption and satellite uplinks.

Computer functionality generally occurs when a computer becomes miniaturised enough to be a small component of a transceiver. Computers are an inherent component of TL10+ transceivers. Standard transceiver computer configurations incorporate the functionality of a portable computer (see page 67) of two Tech Levels prior functionality at the computer's cost at its introductory Tech Level but with no increase in the transceiver's mass. Custom computer installations of up to the current Tech Level of portable computer are often available, adding the portable computer's equivalent mass and twice the computer's cost to the total mass and cost of the transceiver.

Encryption is very dependent on Tech Level. Decryption is normally a Very Difficult (12+) Electronics (comms) or Electronics (computers) check but encryption created by a higher Tech Level is generally impossible to decrypt within a reasonable timeframe. If communicating between devices of differing Tech Levels, the entire communications stream uses the encryption technology of the lowest Tech Level device. Decrypting a lower Tech Level's encryption algorithm provides at least DM+1 for every Tech Level a decryption tool is superior to the technology used to encrypt the information. A hardware encryption module costs Cr4000 and is available starting at TL6.

Note: By TL8 nearly all transmissions are encrypted by default but the encryption module provides a much higher degree of protection against advanced decryption methodologies which target weakness across the entire communications chain. To decrypt information protected by only the 'default encryption' of TL8+ transceivers requires only a Difficult (10+) check.

A **satellite uplink** allows a radio communication system to maintain a steady link between a ship or satellite in orbit and a surface transceiver. Laser and meson transceivers do not require satellite uplinks as they have integral capability to establish point-to-point between two stationary or moving transceivers. A satellite uplink requires a transceiver capable of at least 500 kilometres inherent range but it allows the transceiver to reach a ship or satellite as far as 50,000 kilometres distant.

The satellite uplink is a dish or flat antenna available at TL6, which doubles the mass of the transceiver or adds a minimum of two kilograms to its mass and costs half as much as the transceiver, or at least Cr1000. Static uplinks to geostationary targets or constellations of satellites are potentially cheaper, still adding 50% to the price of the transceiver but without the Cr1000 minimum.

A satellite uplink will effectively amplify a transceiver's range up to 100 times. If both transceivers in a communications link have uplinks, communications can reach 10,000 times the range of the strongest transceiver, allowing a large receiving station to acquire a signal across the span of a solar system.

Transceiver Option	Effect/Limitation	Kg	Cost
Computer/x	TL-2	—	+Computer/x cost at TL-2
Computer/x	TL	+Computer/x kg	+2 x Computer/x cost
Encryption	TL specific	—	+Cr4000
Satellite uplink	X 100 range	+100% or 2kg	+50% or Cr1000

COMPUTERS AND SOFTWARE

Any technological society runs on computers, with access to them as basic as the right to air and water. To those both knowledgeable and skilled, they open an array of possibilities in all areas of life and having the right computer for the right job is often more important than carrying a gun.

USING COMPUTERS

Computers in Traveller are ranked by their Processing score, typically between 0 and 9. A Computer/3, for example, has a Processing score of 3. This is its ability to run software.

Note that Processing does not limit how much software a computer can store and have ready to use, just how many software packages can be active at once. Beyond TL8, the storage capacity of even a modest computer is effectively unlimited.

All software has a Bandwidth score, which represents the processing power a computer requires to run it. At any one time, a computer can run any software packages whose combined Bandwidth does not exceed its Processing score.

For example, a Computer/3 could run Translator/1 and Security/2 simultaneously but if the operator using it then wanted to run Intelligent Interface (which requires 1 Bandwidth) they would have to swap it with one of the existing packages.

An operator can use any high-Bandwidth software at a lower Bandwidth, to a minimum of the lowest Bandwidth shown. For example, an operator could run Intrusion/3 on a Computer/1 but it would only function as Intrusion/1.

A computer with Processing 0 can only run one software package of Bandwidth 0 at a time. The exception to this is the Interface program. Interface is the only program that can run on a computer terminal or interface device but it will run in conjunction with one other Bandwidth 0 program on other Computer/0 devices. A computer with Processing 1 or greater can run an effectively unlimited number of Bandwidth 0 programs.

SHIP-BASED COMPUTERS

The computers used on spacecraft to calculate jump travel and combat solutions are more powerful than those typically found planetside and can run much more sophisticated software. These are covered in detail within *High Guard*. Advanced multi-node computers of this type may also be found operating large surface installations such as starports, factories or military bases. These are capable of running any software detailed in this chapter but are generally focused on spacecraft-specific programs.

Software packages of more than 1 Bandwidth cannot be copied easily, as they require a non-trivial amount of bandwidth to transfer and are generally restricted by copy-protection schemes.

COMPUTERS

By TL8 most technological devices, from vehicles to light fixtures, utilise an internal computer. The computers described here are general purpose or specialised versions designed to run the software packages presented.

PROTO AND RETRO TECH VARIANTS

Computer capabilities are very susceptible to Tech Level variances and are subject to the Proto and Retro Tech rules (see page 11). These allow for early, expensive and massive computers up to two Tech Levels earlier than described and for continued innovation to make these products cheaper and smaller with each subsequent Tech Level.

Retrotech variants have a strong effect on computer models. At each Tech Level above the listed optimal Tech Level, computers are available at half the price and mass of the basic model.

COMPUTER TERMINAL/INTERFACE

This is a 'dumb terminal' with only limited processing power. It serves as an interface to a more powerful computer such as a ship's computer or planetary network. Terminals range in size depending on their control method – a holographic display terminal can be much smaller than one with a physical keyboard and screen. A computer terminal/interface has Computer/0 and can only run the Interface program. At TL6 the terminal may include a cathode-ray screen, a keyboard, a pointing device and a physical interface connection or a short-range wireless interface to a more powerful computer. By TL8 an interface can fit in a pocket, includes short range wireless or transceiver communicators and operates by touch or voice command.

Computer	TL	Capability	Kg	Cost
Terminal	6	Computer/0 and interface	2	Cr200
Interface	8	Computer/0 and interface	—	Cr100

MAINFRAME COMPUTER

By the standards of its Tech Level, the mainframe is a very sophisticated and powerful computer, used by militaries and corporations for tasks beyond the abilities of smaller computers. A mainframe has much of its mass dedicated to cooling and power supply, and will be accessed by computer terminals, although early mainframes lack even that ability.

Mainframe Computer	TL	Capability	Kg	Cost
Basic	5	Computer/0	5,000	MCr2
Improved	6	Computer/1	4,000	MCr4
Advanced	7	Computer/2	1,000	MCr5

Beginning at TL7, multiple mainframes may operate as supercomputers. This requires a geometric progression of mainframes to achieve higher computer capabilities. Two TL7 mainframes may combine to act as a Computer/3 but Computer/4 requires four mainframes and Computer/5 requires eight. Increasing computing power in this manner requires specialised equipment and linked mainframes cannot achieve a greater rating than their Tech Level.

MID-SIZED COMPUTER

The definition of mid-sized computers changes as technologies progress, from initial closet-sized units to smaller server computers that are still too large to carry and power except in a dedicated backpack with external power sources. These replace the mainframe by TL8 and can act as components of mid-sized supercomputers. Supercomputer clusters based on mid-sized computers are not subject to TL maximums in performance.

Mid-sized Computer	TL	Capability	Kg	Cost
Basic	6	Computer/0	500	Cr500000
Improved	7	Computer/1	50	Cr50000
Enhanced	8	Computer/2	10	Cr10000
Advanced	9	Computer/3	5	Cr10000
Superior	10	Computer/4	5	Cr10000

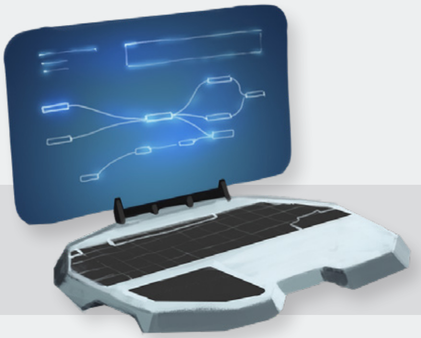
PORTABLE COMPUTER

A portable computer is a computer system with considerable processing power, yet able to be carried easily – in today's world, this covers laptops and tablets of all sizes. It is more powerful than a computer terminal and can be used without access to a network.

Portable Computer	TL	Kg	Cost
Computer/0	7	5	Cr500
Computer/1	8	2	Cr250
Computer/2	10	0.5	Cr500
Computer/3	12	0.5	Cr1000
Computer/4	13	0.5	Cr1500
Computer/5	14	0.5	Cr5000

Even at earlier Tech Levels, the mass and size of a portable computer decreases even faster than retrotech rules. For all portable computers, the following size progression applies:

Tech Level	Kg	Size	Cost
+1	0.25	Tablet	x0.5
+2	—	Mobile Comm	x0.25
+3	—	Computer Chip	x0.125
+4	—	Microscopic Chip	x0.0625



Portable Computer

PORTABLE COMPUTER OPTIONS

Portable computers can include the following standard options and accessories:

CAMERA

Any computer of TL8 or above can have a built-in still and video camera with both visual spectrum and infrared capabilities if specified at purchase. These cameras are often used as biometric authentication devices, to facilitate a video link over a communications channel or for recording.

COMMS

Any computer of TL8 or more can act as a comm unit or transceiver if specified at purchase. A five kilometre range comm is more than sufficient to access a planetary data network and a high-speed short-range wireless link for software and data transceiver does not increase the cost of the computer. More powerful transceivers of longer range and negligible mass (see page 64) can be added to a portable computer.

DATA DISPLAY/RECORDER

This headpiece provides a continuous heads-up display, allowing the user to view data from any linked system. DD/R headsets are commonly used by starship crews to access information without changing their primary console displays. They are able to display data from any system, not just computers – including vacc suit oxygen reserves, grav belt status and neural activity scanner results. The recorder function can store up to a day of high-quality video feed internally and transmit the data to a higher capacity long term recording device in real time.

Option	TL	Effect	Kg	Cost
Data Display/ Recorder	13	Heads-up display and recording of visual data	—	Cr500

DATA WAFER

The standard information storage in many universes is the data wafer, a rectangle of hardened plastic the size of a credit card. The interface is standardised but the internal workings vary. A TL10 data wafer is memory diamond, with information encoded in carbon atoms; advanced wafers use more exotic means of data storage. At TL8 a data wafer can store and transfer Bandwidth/0 computer programs; at TL10 it can hold Bandwidth/1 programs.

Item	TL	Effect	Kg	Cost
Data Wafer	8+	Stores data or Bandwidth 0 or 1 programs	—	Cr5

PHYSICAL USER INTERFACE

A portable computer and its Interface software require a physical user interface for data input and display. At TL7 this is accomplished via keyboard, video screen and a pointing device. By TL8, voice is available for both input and output, although older methods are still supported. At TL9 early holographic interfaces are available but their bulk makes them external accessories of limited portability; instead, most portable computers of negligible mass rely on wireless connections to other devices, such as entertainment centres, wall displays or even implanted communicator augments. By TL12 a basic holographic display is standard.

INTERFACES AND INTELLECTS

Choosing the right software package to use on your computer is important and depends on what you are trying to do:

- If using the computer for general tasks, a basic Interface package is needed.
- If using the computer to access an Expert program, Intelligent Interface is necessary to gain DM+1 to a skill you have at skill level 0 or above.
- If unskilled, Expert packages must be run with an Intellect program.

SPECIALISED COMPUTER

A computer can be designed for a specific purpose with a hardware-implemented Intelligent Interface or Intellect program optimised for an Expert skill. These specialised computers are available at TL8 and above. Specialised computers allow all computer bandwidth to be available for the Expert skill package, which is purchased separately. Specialised computers cannot be reprogrammed to accept a new Expert skill package.

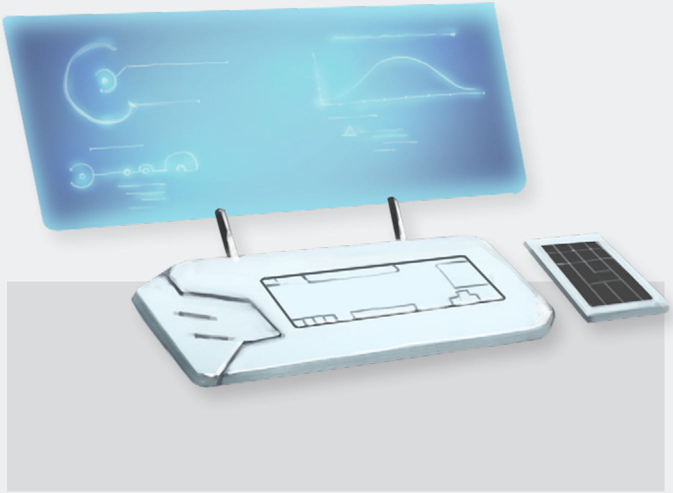
Specialised computers with Intelligent Interface allow a skilled individual to gain DM+1 on relevant tasks and costs five times the standard cost of a general computer of equal bandwidth.

The specialised computer with Intellect allows unskilled individuals to instruct the computer to accomplish a task and report results. It is initially available at TL9 and costs 10 times the standard cost of a general computer of equal bandwidth.

Specialised Computer	TL	Cost
Intelligent Interface	8	x5
Intellect	9	x10

SOFTWARE PACKAGES

The most sophisticated computer in the galaxy is little more than a power-consuming collection of circuits without a software package to make use of its processing power. The huge variety of software available allows computers to become the most flexible device a Traveller can own.



AGENT

Agent software packages provide computers with a degree of intelligence and the ability to autonomously carry out tasks assigned to them which require the use of Electronics (computers). For example, an Agent package might be told to hack into an enemy computer system and steal a particular data file. Agent is effectively a specialised combination of Expert Electronics (computers) and a single-purpose Intellect software package. An Agent package requires no other interface packages and can use the full bandwidth of a computer to complete its tasks. As with Expert packages, Agent software provides DM+1 when used in conjunction with a Traveller's Electronics (computers) skill rather than autonomously.

Software	Bandwidth	TL	Cost
Agent/0	0	11	Cr500
Agent/1	1	12	Cr2000
Agent/2	2	13	Cr100000
Agent/3	3	14	Cr250000

DATABASE

A database is stored information on a topic that can be searched with an Electronics (computers) check or using an Agent. Bandwidth is not necessary to store the data but an interface package is required to access it. The database can be stored on the computer or a data wafer.

Software	Bandwidth	TL	cost
Database	—	7	Cr10–10000

DECRYPTOR

Decryptor software packages allow a comms operator to analyse intercepted transmissions and decrypt them in real-time. This requires a Very Difficult (12+) Electronics (comms) check but DM+1 is granted for every Tech Level the transmitting computer or comms device is below the intercepting computer's software. A further DM+2 is granted if 1D hours is spent analysing the transmission. Furthermore, Decryptor packages are only available at the Tech Level specified and are unable to decrypt transmissions from devices of a higher Tech Level.

Software	Bandwidth	TL	Cost
Decryptor/1	1	10	Cr5000
Decryptor/2	2	12	Cr10000
Decryptor/3	3	14	Cr20000
Decryptor/4	4	16	Cr50000

DIGITAL FRIEND

Digital Friend is a replacement for an Intelligent Interface package that has been given a definable (and adjustable) personality and is usually given a name by its user. It was designed for people who wanted more 'humanity' in their computers and for those who spend long periods in isolation, such as scouts and belters. Digital Friends are also used for therapeutic purposes and have been useful in resolving long standing mental issues held by many Travellers. If using Fatigue checks during long duration space voyages or using the Sanity (STY) characteristic from the *Traveller Companion* (page 7), at the Referee's discretion a computer running Digital Friend allows a Traveller a DM+1 on Fatigue and STY checks.

Software	Bandwidth	TL	Cost
Digital Friend	2	11	Cr1750

FIND YOUR DIGITAL FRIEND

EXPERT

Expert software packages allow a computer to mimic a specific skill – which must be specified when the software package is purchased. However, the package can only help if the difficulty of the task is within its parameters. Expert/1 allows Difficult (10+) tasks to be attempted, while Expert/2 allows Very Difficult (12+) tasks to be tried. Expert/3 is required for Formidable (14+) tasks.

If a user already has at least level 0 of a skill, then any level Expert package grants DM+1 to their skill check. Expert software requires Intelligent Interface (Bandwidth 1), or Digital Friend (Bandwidth 2) to run, unless installed on a specialised computer. In most instances, only INT- and EDU-based checks can be attempted.

A user without the specified skill can use an Expert package with Intellect (Bandwidth 1+) software to make a skill check as if they had the skill at the Expert software's Bandwidth -1.

A variety of skill packages are available. Unless using a specialised computer, Expert software is not available until TL11 and requires Intelligent Interface, Digital Friend, or Intellect as described above.

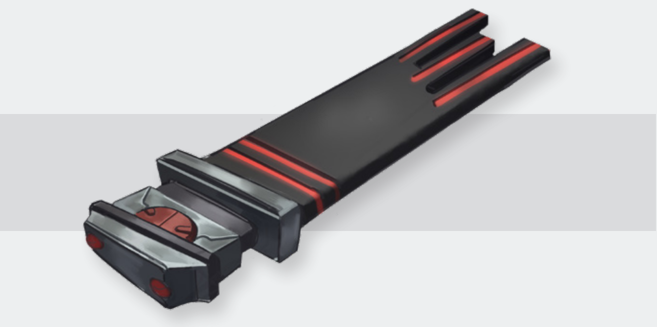
Software	Bandwidth	TL	Cost
Expert/1	1	—	See table
Expert/2	2	+1	x10
Expert/3	3	+2	x100

The Expert Skill Packages table lists the skills commonly available for computers. Travellers augmented with a neural link or neural jack may acquire and use skills not listed that normally require characteristics other than INT or EDU. These expert packages are available for Expert/1 at TL11 at a cost of Cr1000.

EXPERT SKILL PACKAGES

Expert Package	TL	Cost
Admin	8	Cr100
Advocate	10	Cr500
Animals (veterinary)	9	Cr200
Astrogation	12	Cr500
Broker	10	Cr200
Electronics ( )*	8	Cr100
Engineer ( )*	9	Cr200
Explosives	8	Cr100
Gambler	10	Cr500
Language ( )*	9	Cr200
Mechanic	8	Cr100
Medic	9	Cr200
Navigation	8	Cr100
Profession ( )*	9	Cr200
Science ( )*	9	Cr200
Steward	8	Cr100
Survival	10	Cr200
Tactics ( )*	8	Cr100

*Each speciality requires a separate package. Profession packages are only available for those skills utilising purely INT or EDU. Obscure profession or language packages may be more expensive or unavailable. An Expert Language package provides both translation and linguistics information for the language, allowing better understanding of idiom, current and archaic dialects, and other subtleties of meaning than available in a generic Translator package.



INTELLECT

An Intellect software package is similar to the more primitive Agent, with more advanced intelligence, able to communicate normally with a Traveller and run an assigned Expert package. It can simultaneously run any Expert package and a number of Expert packages equal to the Bandwidth remaining after subtracting that required for Intellect. Intellect is required for unskilled Travellers to use an Expert package.

Software	Bandwidth	TL	Cost
Intellect/1	1	12	Cr2000
Intellect/2	2	13	Cr50000
Intellect/3	3	14	Cr200000

INTELLIGENT INTERFACE

The Intelligent Interface package features an artificial intelligence which allows a computer to report data and receive commands as if it were a sentient being. Those familiar with Intelligent Interfaces will quickly recognise its presence but a more primitive Traveller could be fooled into thinking it is a living intelligence. Intelligent Interface is required for a Traveller with at least skill 0 to receive DM+1 when using an Expert software package; it does not allow an unskilled Traveller to benefit from an Expert package.

Software	Bandwidth	TL	Cost
Intelligent Interface	1	11	Cr100

INTERFACE

An Interface package is usually required for interaction with a computer, as it provides the ability to display data upon a screen, over audio or some other medium. The lack of Interface does not restrict the abilities of a computer – only how it can communicate with users. Interface is installed freely on most computers upon purchase and does not prevent Computer/0 devices from running one additional Bandwidth 0 program.

Software	Bandwidth	TL	Cost
Interface	0	7	Cr0

INTRUSION

Intrusion software is designed to break through Security packages, allowing users to gain access to computers that would otherwise be off limits. Because of this, Intrusion software is illegal on many worlds (typically any worlds of Law Level 4+). Intrusion grants a DM equal to its Bandwidth to all checks made to electronically hack into a computer. Intrusion can be used in conjunction with an Agent package or by a Traveller using Electronics (computers) skill.

Software	Bandwidth	TL	Cost
Intrusion/1	1	10	Cr1000
Intrusion/2	2	11	Cr10000
Intrusion/3	3	13	Cr100000
Intrusion/4	4	15	MCr1

PERSONAL TRAINER

Often a modified Digital Friend package, the Personal Trainer is intended to aid the education of a Traveller. Its use grants DM+1 to all checks made to gain or improve skills during post-career education (see *Traveller Core Rulebook* page 55) but a new package must be purchased for each new skill being studied.

Software	Bandwidth	TL	Cost
Personal Trainer	1	11	Cr2000

SECURITY

The purpose of a Security package is to defend against hackers and other intrusion attempts, providing an effective firewall to keep the computer safe from interference. The ability of Security to defend itself is represented by the difficulty of the Electronics (computers) check required to bypass it, which improves with the complexity of the Security package. Security/0 is installed freely upon most computers upon purchase.

Software	Bandwidth	TL	Intrusion Difficulty	Cost
Security/0	0	8	Average (8+)	Cr0
Security/1	1	10	Difficult (10+)	Cr200
Security/2	2	11	Very Difficult (12+)	Cr1000
Security/3	3	12	Formidable (14+)	Cr20000

TRANSLATOR

Translator packages are specialised Expert software that only use Language skills. The TL9 version provides a near-real-time translation but at TL10 it works in real-time and better understands the nuances of language. Both can handle all languages common in the area of space from which they originated – usually within a sector or a single polity, whichever is larger – and can automatically update themselves upon arriving at any TL9+ world. Unlike Expert packages, translator packages provide a very literal translation, sometimes misunderstanding idioms, dialects or subtle meanings.

Software	Bandwidth	TL	Cost
Translator/0	0	9	Cr50
Translator/1	1	10	Cr500

UNIVERSAL TRANSLATOR

The Universal Translator package allows real-time analysis of both written and spoken language. Using a database of known languages and multi-tiered algorithms means that even previously unknown languages can usually be translated. Languages relying on senses other than sight or hearing, or originating from species whose physiology or psychology is unknown or poorly understood may defy the Universal Translator's capabilities.

This package requires varied input to analyse a language. For unknown languages of moderate complexity, the package's initial success after the equivalent of an hour of spoken input or equivalent written material is the result of a Difficult (10+) check, to which the software's operator may add any Science (linguistics) skill as a positive DM. The following complications each add DM-2 to this check:

- Languages of previously unknown sophonts.
- Languages relying heavily or primarily on non-visual and non-auditory components.
- Written language without context (no pictures, obvious symbology, or correlating language text).

This task can be performed carefully by consuming six hours' worth of material to receive a DM+2.

The Effect indicates the accuracy of the translation, with positive results indicating basic comprehension and negative effects suggesting inaccuracies and translation errors. An Effect of -6 indicates the translator is incapable of understanding the language. Other than this exceptional failure result, the package may attempt additional checks for every subsequent hour of new verbal or written material, with a cumulative DM+1 for every additional check. Once the total Effect reaches +6, the universal translator is able to perform real-time translation similar to the standard Translator/1 package. If the total Effect first reaches DM-6, the universal translator has reinforced systematic errors which will lead to egregious mistranslations.

Software	Bandwidth	TL	Cost
Universal Translator	3	12	Cr25000

OPEN-SOURCE SOFTWARE

The cost and Bandwidth of software packages assume they are proprietary commercial products. In some universes or polities, this is a standard assumption. For instance, most computers in the Third Imperium operate with an interface first created by the Vilani. A licensed package can run on one computer at a time and loading onto new computers requires revalidation of the license.

Other cultures are more freewheeling when it comes to copying software but these packages often lack the long history of development and integration of commercial options. If the Referee chooses to allow open source, either free or possibly easily copyable software, consider imposing one or more of the following limitations:

- **The computer is more expensive:** Computers capable of running this software cost double.
- **The software is harder to use:** An operator must have Electronics (computers) 1 or higher to use it.
- **The software is less efficient:** All software with a Bandwidth greater than 1 require +1 Bandwidth to run.
- **The software is not legal:** On some worlds (Law Level 9+) running unlicensed software is a crime.

ELECTRONICS

Consumers within mid to high Tech Level societies love electronics and a well-equipped Traveller is no exception. This section contains devices designed to make life just a little bit easier – or at least more pleasant.

Proto and Retro Tech features (see pages 10-11) apply to electronic devices as early as two Tech Levels prior and three Tech Levels after the listed Tech Level, although retrotech versions may have been superseded by newer versions with improved features and in all cases Availability factors may make these versions rare or unobtainable.

VISION

These devices expand the vision of the user, allowing greater capabilities in detection and/or storage of visual data.

BINOCULARS

Binoculars use optical lenses to magnify objects viewed through them, effectively increasing the visual range of the user, with up to 10 times magnification. The effective field of view is reduced, however, as the magnification increases. Price stays the same across Tech Levels, although mass may be reduced through the use of lighter components, and the quality of the lenses improves as Tech Levels increases.

Item	TL	Effect	Kg	Cost
Binoculars	3	Up to 10x magnification of distant objects	1	Cr75

CAMERA

A camera takes images. Primitive cameras are large, fragile devices which take monochrome pictures of stationary objects and require extensive supplementary equipment for image processing. As technology advances, cameras become smaller and better able to capture colour and movement. Prior to TL8, motion cameras lag one Tech Level behind their still picture counterparts in size and features, costing five times as much. High-end professional cameras are twice as heavy as the standard model and cost 10 times as much; these often require multiple expensive lenses (up to Cr2000 each) to capture professional-quality images but allow DM+2 to relevant Art checks.

Prior to the advent of digital media, all camera images require processing and consumable materials. These cost Cr1 per image, reduced to Cr1 for 10 images at TL6. Professional-grade images cost twice as much and motion pictures cost Cr50 per hour of footage at TL5–6 and Cr5 per hour at TL7. At TL8 all but the most exacting camera requirements are standardly available on mobile comms and pocket computers, and by TL10 chip-sized multi-lens 2D cameras become ubiquitous and included 'free' in most electronic devices, although professional equipment persists. Holographic photography, initially available as early as TL9, requires more advanced, dedicated equipment.

Item	TL	Effect	Kg	Cost
Camera (still, mono)	4	Tripod-mounted device to capture images	50	Cr1000
Camera (still, mono)	5	Handheld device, development required	2	Cr200
Camera (still, colour)	6	Handheld device, instant photo	1	Cr100
Camera (still, colour)	7	Digital media image	1	Cr200
Camera (motion)	5–7	Motion picture camera (pre TL8)	TL1	x5, TL1
Camera (motion/still, colour)	8	Professional-grade stand-alone camera	1	Cr200
Camera (still, holographic)	9	Moderate-grade holographic images	2	Cr1000
Camera (motion, holographic)	10	Full motion holography	2	Cr2000
Camera (professional grade)	5+	DM+2 to Art checks	x2	x10
Camera Lens	4+	For professional cameras, multiple required	—	Cr100–2000

CHEMI-VIEW GOGGLES

An advanced set of goggles which attach to a wrist-linked 'sniffer', chemi-view technology allows the user to set their viewer to a specific chemical compound, protein strand or elemental presence. The sniffer takes a sample and locks the goggles into the proper vision mode, causing the goggles to brightly any traces of that substance. This item is useful for finding drugs, bombs or alien species, but requires a reference sample to operate. The sniffer is powerful enough to be set for specific strands of DNA, if a tissue sample is made available.

Item	TL	Effect	Kg	Cost
Chemi-view Goggles	13	Detects specified chemical compound	—	Cr5000

COLD LIGHT LANTERN

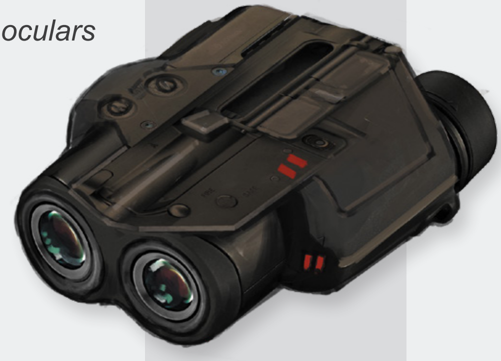
A fuel cell powered version of the flashlight lasts for three days of continuous use. Produces a wide cone of light up to 18 metres away with a radius of six metres. Also capable of producing a tight beam of light up to 36 metres with a one metre radius or be used to illuminate a 10 metre radius.

Item	TL	Effect	Kg	Cost
Cold Light Lantern	6	Fuel cell powered 3 day electric torch	0.25	Cr20

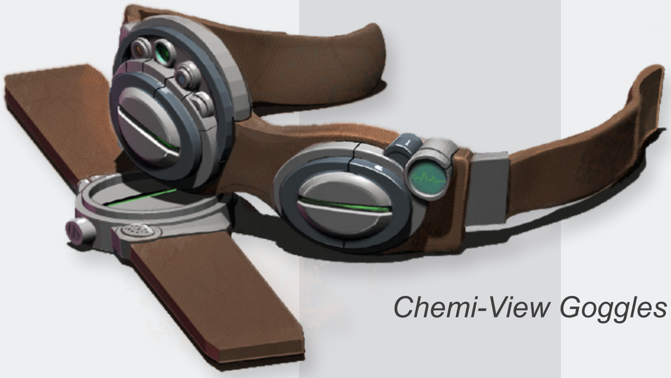
ELECTRONIC BINOCULARS

Similar to optical binoculars, electronic binoculars also include a laser rangefinder and light intensification function that allows vision in all conditions of poor lighting except total darkness. Electronic binoculars do not allow the user to see through fog, smoke or thick foliage. At TL9 the binoculars include infrared and thermal imaging capabilities. From TL10 they incorporate an image-processing unit to help identify partially hidden objects.

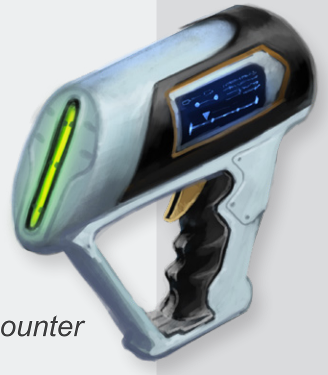
Electronic Binoculars	TL	Effect	Kg	Cost
Basic	8	10x magnification, rangefinder, light intensification	1	Cr750
Improved	9	+Infrared thermal imaging	1	Cr750
Advanced	10	+Image processing of partially seen objects	1	Cr750



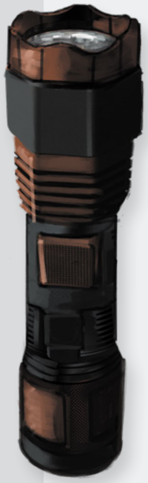
Binoculars



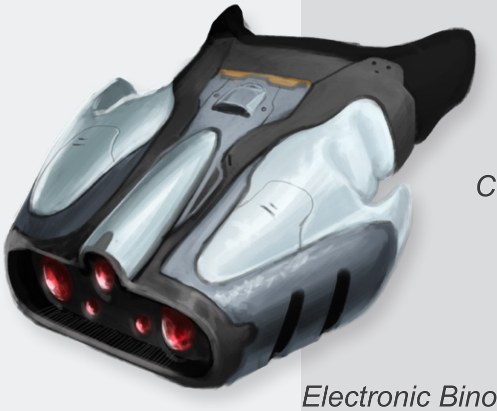
Chemi-View Goggles



Geiger Counter



Cold Light Lantern



Electronic Binoculars

FLASHLIGHT

The common flashlight. It is battery powered and lasts six hours of continuous use. A flashlight produces a wide cone of light up to 18 metres long with a radius of six metres. TL7+ models have adjustable beams allowing them to produce a tight beam of light up to 36 metres long, with a one-metre radius or illuminate a 10 metre circle. At TL8 the efficient bulbs and batteries allow for 24 hours continuous use, quick recharging, and multiple modes including strobes and narrow beams up to 250 metres. Specialised flashlights can be mounted on helmets or weapons.

Flashlight	TL	Effect	Kg	Cost
Basic	6	Flashlight: 18 x 6m cone of light, 6 hours	0.5	Cr10
Improved	7	+Adjustable to 36 x 1m cone or 10 m radius	0.5	Cr10
Advanced	8	+Multimode, rechargeable, 24 hours	0.5	Cr10

GEIGER COUNTER

This simple handheld device picks up ambient or projected radiation in the area and relays it as a series of clicks and lights. The TL5 Geiger counter detects the presence of any source of 30 rads per hour or greater. The more advanced version can determine exactly what element is producing the radiation and the direction of origin.

Geiger Counter	TL	Effect	Kg	Cost
Basic	5	Detects radiation presence	2	Cr250
Improved	10	+Determines source's composition and direction	—	Cr400

INFRARED FLASHLIGHT

A version of the flashlight which emits infrared instead of visible-spectrum light. Consequently, only those equipped with IR vision aids can see the illumination. It has an integral, rechargeable battery which provides six hours of continuous illumination.

Item	TL	Effect	Kg	Cost
Infrared Flashlight	7	Infrared-emitting 6 hour rechargeable light	—	Cr50

INFRARED GOGGLES

A headset with goggles or an adaptation to a visor that allows a wearer to see visible light and thermal imaging. Thermal imaging allows temperature differences to be detected, making warm objects like animals, people and vehicles obvious unless there is a lot of 'heat clutter' in the area. It will not allow the wearer to find his way around a cave or similar environment where everything is much the same temperature.

Infrared Goggles	TL	Effect	Kg	Cost
Basic	6	Infrared or thermal vision	1	Cr500
Improved	8	Lightweight	—	Cr500

LIGHT INTENSIFIER GOGGLES

These goggles allow clear, monochrome vision up to 18 metres in anything less than total dark. While some light is required to produce this effect, anything approaching normal daylight conditions severely degrades the clarity. At TL9, light intensifier goggles are combined with IR goggles and adjust to normal vision in daylight conditions.

Light Intensifier Goggles	TL	Effect	Kg	Cost
Basic	7	light intensification	1	Cr500
Improved	9	+Infrared thermal imaging	—	Cr1250

PERSONAL HUD

A personal HUD (Heads-Up Display) can be fitted to a set of goggles or shades, a monocle or the inside of a helmet. The HUD displays incoming messages and video from a user's mobile comm, data pulled from a portable computer or a weapon's aiming device. Tying any device or weapon into the HUD and calibrating it takes an hour and costs Cr100. Information can be exchanged by cable or wirelessly. The latter creates a certain amount of radio 'noise' which can be detected or jammed, so military HUDs normally use fibre-optic cable.

Item	TL	Effect	Kg	Cost
Personal HUD	9	HUD for one calibrated device	—	Cr1500

Infrared Flashlight

Infrared Goggles

Light Intensifier Goggles

PRIS BINOCULARS

PRIS (Portable Radiation Imaging System) binoculars have no lenses, projecting an image for the wearer as if they were using optical binoculars. The image can be gathered using a variety of electromagnetic wavelengths from microwaves through visual light to gamma rays. The binoculars read naturally-occurring emissions, then convert the data into an optical display using false colour. Composite images using different spectra are possible and can highlight things missed when viewing in just one mode but this can be confusing to a new user. Electronics (sensors) skill is not required for the use of PRIS devices.

PRIS goggles, are essentially the same but have close-range magnification capability instead of distance magnification and are used by engineers. One of their most important features is the ability to see stresses and cracks in materials before they become visible to the unaided eye.

At TL15, PRIS ‘sunglasses’ become available, incorporating imaging features in eyeglasses or a visor with a thick upper frame; a wrist unit or computer interface (with Bandwidth 0) provides control. These sunglasses can switch from distant to close-range viewing on command.

Item	TL	Effect	Kg	Cost
PRIS Binoculars	12	Multi-spectrum vision, long range magnification	1	Cr3500
PRIS Goggles	12	Multi-spectrum vision, close-range magnification	—	Cr4000
PRIS Sunglasses	15	Eyeglass version of PRIS Binoculars/ Goggles	—	Cr7000

PSI-FINDER BINOCULARS

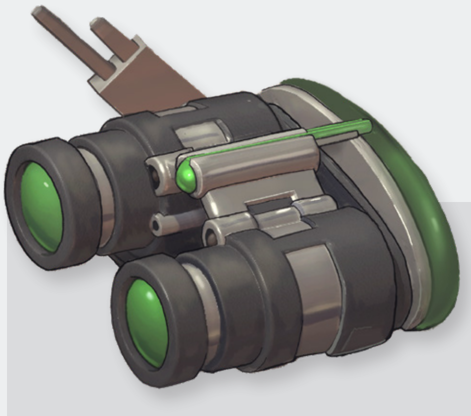
These binoculars are the same as PRIS binoculars but have one additional setting. By turning on a special filter, the psi-finder binoculars place a nimbus of luminescent light around the image of anything with a PSI score. The stronger and brighter the nimbus is, the more powerful the psionic ability of the individual viewed. A higher tech version of these is available in a thin visor form, either as a standalone item or as a coating.

Item	TL	Effect	Kg	Cost
Psi-finder Binoculars	16	PRIS + PSI detection	1	Cr10000
Psi-finder Visor	17	Thin form or visor coating	—	Cr15000

SPOTLIGHT

A large electric light, usually vehicle, building or ground-mounted, although also available with a deployable tripod. A spotlight is a focused beam providing daytime-bright lighting in less than 30 degrees of conical coverage to a distance of 200 metres. A floodlight version is more suitable for area lighting and has identical mass and cost. At TL9 and above this light is capable of switching between spot and flood modes. These lights are normally attached to external power sources but have internal short-term battery storage at TL9 for up to one hour of use. Larger lights are available with additional range at linear increases in mass and cost.

Item	TL	Effect	Kg	Cost
Spotlight	5	Illuminates 30° cone to 200 metres	20	Cr200
Floodlight	5	Illuminates 120° cone to 100 metres	20	Cr200
Combination Light	9	Variable beam width, 1 hour battery life	10	Cr500


PRIS Binoculars

Psi-Finder Binoculars

Spotlight

GADGETS AND ESSENTIALS

These devices are a small representation of various miscellaneous electronic items among the nearly limitless variety of gadgets that no Traveller should be without.

RADIO JAMMER

This device generates noise in radio frequencies to disrupt communications. The handheld version is useful for blocking surveillance devices and has a range of only 30 metres; its internal batteries last for one hour or it can be connected to a power source for longer operation. The heavy version relies upon external power; it has an adjustable range, potentially blocking all radio signals within 100 kilometres. Attempts to communicate within a jammed zone require a Difficult (10+) Electronics (comms) check every round, with TL differences applying as a DM.

The radio jammer does not block tight-beam laser or maser communications. Privately operating a heavy radio jammer in a civilised environment is almost always illegal and even operating the handheld device may draw the attention of law enforcement if detected or reported.

Item	TL	Effect	Kg	Cost
Radio Jammer, Handheld	6+	Disrupts radio comms within 30 metres	0.5	Cr500
Radio Jammer, Heavy	4+	Disrupts radio comms up to 100 kilometres	30	Cr50000

RING LASER

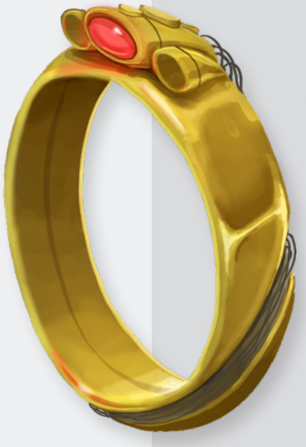
A miniaturised tool laser built into a finger ring. While the laser is too weak to serve as a weapon, it is useful for small cutting or welding jobs. The ring includes a battery with enough power for up to 10 minutes of continued operation. It can, however, be used for intimidation device and can cause blindness if aimed at unprotected eyes.

Item	TL	Effect	Kg	Cost
Ring Laser	16	Miniature tool laser	—	Cr1000

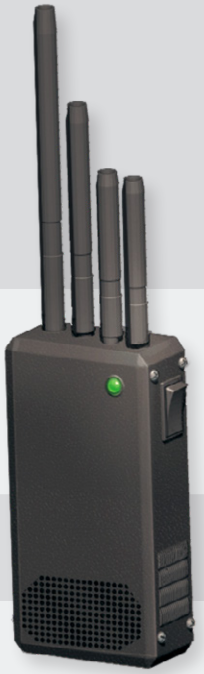
WRISTWATCH

A simple timepiece of varying qualities and functionalities. A variety of gimmicky 'survival watches' and 'space crew chronometers' are available. Some contain reasonably useful accessories but most are suitable only as gifts to be given by misguided but well-meaning relatives. 'Prestige' watches can cost Cr1000 or more but do little extra than look good. At TL11, a wristwatch will come complete with a Computer/0 and is capable of being upgraded with holographic displays. At TL12 Computer/1 becomes a standard wristwatch feature.

Wristwatch	TL	Effect	Kg	Cost
Basic	4	Keeps time	—	Cr100
Improved	7	Keeps time + option for any zero mass electronics	—	Cr10
Enhanced	11	Computer/0 + option for any zero mass electronics	—	Cr150
Advanced	12	Computer/1 + option for any zero mass electronics	—	Cr200



Ring Laser



Radio Jammer

Wristwatch

SENSORS

Most sensors are designed to be plugged into a computer system but can display data directly to the user on built-in screens or by feeding it to the user's suit or HUD display.

BIOSCANNER

The bioscanner 'sniffs' for organic molecules and tests chemical samples, analysing the make-up of whatever it is focused on. It can be used to detect poisons or bacteria, analyse organic matter, search for life signs and classify unfamiliar organisms.

Item	TL	Effect	Kg	Cost
Bioscanner	15	Organic molecule sensing and analysis	3.5	Cr350000

BUG SWEEPER

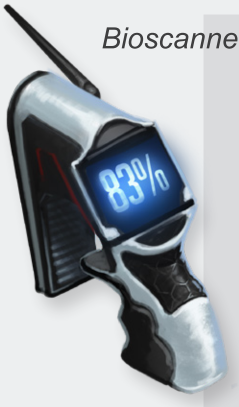
This handheld device scans a location for electromagnetic signatures from hidden microphones, cameras, microrobots and other surveillance devices. The difference between the detector's Tech Level and that of the 'bug' provides positive DM to any Electronics (sensors) check. The check to detect an actively transmitting device is Average (8+) but for passive devices, it is a Very Difficult (12+) check. The bug detector has a range of six metres. A more expensive version provides a DM+2 to detection attempts. These are often installed room-by-room in secure facilities as part of an overall security system.

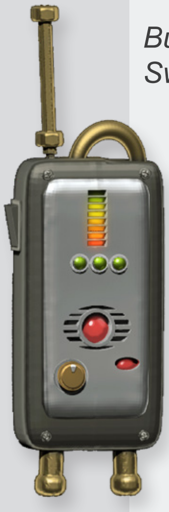
Item	TL	Effect	Kg	Cost
Bug Sweeper (standard)	5+	Detects surveillance devices	0.5	Cr100
Bug Sweeper (deluxe)	5+	Detects surveillance devices, DM+2	0.5	Cr1000

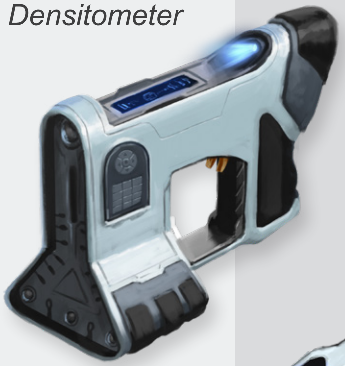
DENSITOMETER

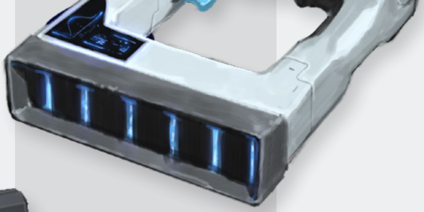
The densitometer uses an object's natural gravity to measure its density, building a three-dimensional image of the object. This portable densitometer's range depends on the mass of the object being scanned. A detailed scan of a person-sized object is possible at 100 metres, while a small starship or building can be scanned more than a kilometre distant, even through intervening obstacles.

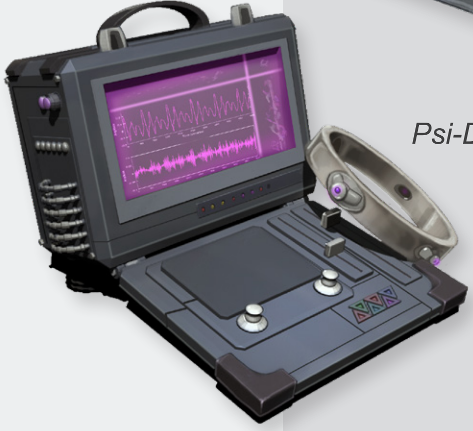
Item	TL	Effect	Kg	Cost
Densitometer	14	Gravity imager	5	Cr20000

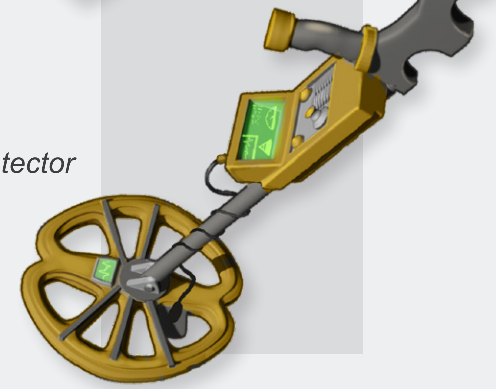

Bioscanner


Bug Sweeper


Densitometer


EM Probe


Psi-Detector


Metal Detector

EM PROBE

This handy device detects the electromagnetic emissions of technological devices and can be used as a diagnostic tool when examining equipment or when searching for hidden bugs or devices (functioning as a deluxe bug sweeper).

Item	TL	Effect	Kg	Cost
EM Probe	10	Electromagnetic detection and analysis	1	Cr1000

GROUND PENETRATING RADAR

A portable ground penetrating radar is able to locate items or anomalies buried in soil or loose rock. Any item of varying density or composition can be detected and identified, usually with an Average (8+) Electronics (sensors) check (INT or EDU, 1D rounds). The initial versions consist of a detector with two telescoping mounted arms connected to a control unit. The TL11 version deploys three dedicated grav-powered drones from the control unit to allow for triangulation to improve accuracy and penetration depth, providing DM+2 to detection attempts.

Ground Penetrating Radar	TL	Effect	Kg	Cost
Basic	7	Detects anomalies to 40 metres depth	5	Cr5000
Improved	9	Detects anomalies to 80 metres depth	4	Cr8000
Advanced	11	Detects anomalies to 160 metres depth, DM+2	2	Cr10000

Ground Penetrating Radar

NAS

METAL DETECTOR

A metal detector uses magnetic fields to locate metals concealed on the surface or buried underground. It can detect underground cables of copper but not fibre optics. Ground penetration depth and ability to identify objects increases with Tech Level. The TL5 metal detector is a large broomstick-like device, the TL7 version is slightly smaller but includes a readout estimating the composition or identity of the object detected. At TL9 the detector becomes small enough to be added as a component to another electronic device.

Metal Detector	TL	Effect	Kg	Cost
Basic	5	Detects coin-sized items to 1 metre depth	5	Cr250
Improved	7	Detects coin-sized items to 3 metre depth	3	Cr150
Advanced	9	Detects coin-sized items to 10 metre depth	—	Cr250

NAS

The Neural Activity Scanner (NAS) consists of a backpack and detachable handheld unit and can detect neural activity up to 500 metres away. The device can also give a rough estimation of the intelligence level of organisms based on brainwave patterns.

Item	TL	Effect	Kg	Cost
NAS	15	Neural activity detection and analysis	10	Cr35000

PSI-DETECTOR

This device is one of the earliest portable instruments for testing psionic ability. Slightly larger than a standard suitcase, it stretches the description of portable. The subject is fitted with an expandable band across their head, which wirelessly connects to the device. Wireless range is 10 metres. It not only determines whether the subject possesses a PSI score but the level of psionic strength. Operating the machine requires a Difficult (10+) Electronics (sensors) check (1D minutes, INT or EDU) with the subject's PSI score as a positive DM. Subjects under the effect of an inhibitor drug inflict DM-2 to this check.

Item	TL	Effect	Kg	Cost
Psi-detector	13	Detects and evaluates PSI rating	10	Cr5000

HOME COMFORTS

The personal living space of a Traveller speaks to their personality and there are many items that can be purchased to allow a Traveller to express themself. Many are curiosities; some are simply designed to make life a little easier or comfier. The equipment in this chapter is intended for Travellers who wish to decorate their homes with the best the galaxy can offer – even if that home is a stateroom on board a tramp freighter far out in uncharted space. In some instances, a Referee may deem that access to some of these items may result in a small positive DM to Fatigue checks during long voyages.

ALIEN COSPLAY KIT

A fad on some worlds, Travellers sometimes choose to go to very elaborate lengths to appear as an alien, such as a Zhodani, Droyne or Aslan. The very best cosplay kits can make a Traveller appear almost indistinguishable from a real alien at a distance, although there will always be a feeling of 'falseness' up close.

Item	TL	Effect	Kg	Cost
Alien Cosplay Kit	7	Superficial alien sophont impersonation	1	Cr350

AUTOBAR

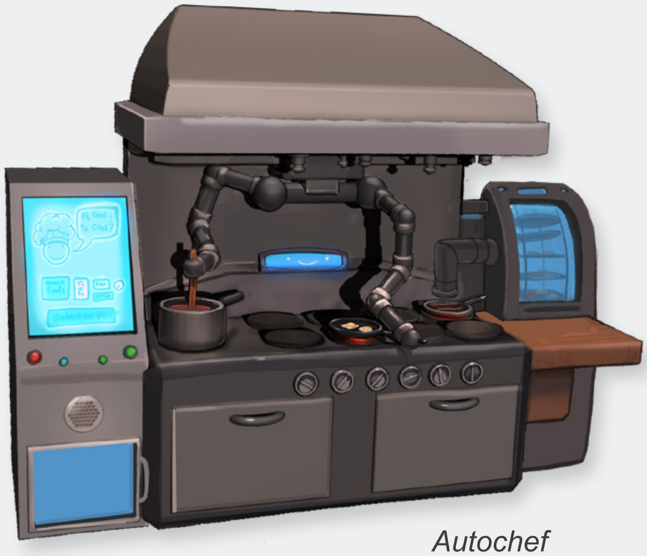
With an automatically updated database covering the finest cocktails developed on civilised worlds, the autobar provides a voice-activated drinks delivery system. The quality of the drinks dispensed is dependent on the quality of the ingredients, which must be procured and replenished periodically. The autobar stores up to two litres of drinks internally and includes attachments to external sources ranging from bottles to barrels.

Item	TL	Effect	Kg	Cost
Autobar	8	Voice-activated cocktail mixer and dispenser	4	Cr300

AUTOCHEF

A fully automated voice-activated robotic food preparation system, the autochef requires a user to simply feed it ingredients and it will deliver properly cooked meals derived from a huge database of recipes. The gourmet autochef is based on the same principles but is capable of more complex creations and performing a wider range of actions, such as opening cans. However, it tends to complain if it is not given premium ingredients. The gourmet model may provide a small positive DM to Steward checks in some instances but it is not a substitute for a ship's steward.

Item	TL	Effect	Kg	Cost
Autochef	9	Robotic food preparation system	6	Cr200
Autochef (gourmet model)	10	+/better meals	5	Cr2500



Autochef

AUTOLAUNDRY

No Traveller wants to take time away from earning a profit by engaging in mundane household chores. The autolaundry was designed to pick up this slack and free Travellers from that most arduous of duties – cleaning clothes. Autolaundries use water and chemical detergents but the detergents are designed to be biodegradable with a catalytic treatment, allowing them to be recycled. These systems use as little water as they can get away with; at TL7, they use less than a cup of water to wash a standard five kilogram load. By TL9, the amount consumed is even less. At TL10, autolaundries are completely sonic and no water is consumed. At TL17, autolaundries use a low-level matter disintegrator to eliminate dirt, bacteria, stubborn stains and even pests such as moth larvae. All autolaundries steam, iron, fold and lightly deodorise clothing.

Autolaundry	TL	Effect	Kg	Cost
Basic	7	Cleans, irons, folds, and deodorises clothing	18	Cr250
Improved	10	+Sonic waterless operation	6	Cr500
Advanced	17	+Disintegration of contaminants	5	Cr1000

BED

For many a Traveller, the most important part of a home is where they sleep, a good night's rest being directly connected to one's success in the field. Many choose a simple mattress-based bed, although those purchased separately are usually an order of magnitude comfier than the standard stateroom model. Others prefer hammocks, which have the advantage of keeping the Traveller safe in the event of adverse gravitational effects. Beyond this, anti-grav beds hold the Traveller in suspension as they sleep, at a height of up to three metres (although most select a much lower height, in the event of power failure) and in perfect comfort.

Item	TL	Effect	Kg	Cost
Bed (mattress)	1	Single-sized bed (~1 x 2 metres)	80	Cr200
Bed (hammock)	1	Suspended and portable	1	Cr10
Bed (anti-grav)	12	Floating suspension system	5	Cr1500
Bed (king-sized)	—	Bigger bed (up to 2.5 x 2.5 metres)	x3	x5

CLOTHING CONSULTANT

A mirror with holographic overlay combined with a limited artificial intelligence, the clothing consultant inspects the sartorial choices of any user standing in front of it, then makes suggestions based on the known fashions of nearby systems. These are then projected onto the image of the user to verify the selection. The clothing consultant comes installed with a variety of personalities, though few select the most sarcastic.

Item	TL	Effect	Kg	Cost
Clothing Consultant	9	Determines and displays appropriate fashion	6	Cr800

DISGUISE KIT

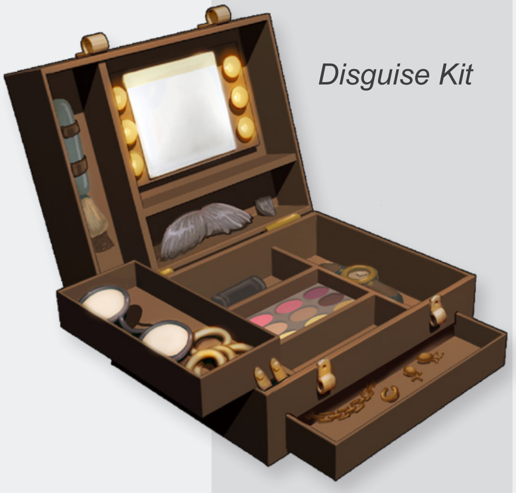
A disguise kit is seldom advertised as such and often includes theatrical makeup, wigs and cosmetics. A Traveller with Deception or Art (performer) skill can use this kit to evade detection from a visual inspection or impersonate another person, usually of the same species but not necessarily of the same gender. Judicious use of a disguise kit allows an Average (8+) Deception or Art (performer) check (1D x 10 minutes, INT or DEX); this check can be part of a task chain providing a DM to subsequent checks reliant on the altered appearance.

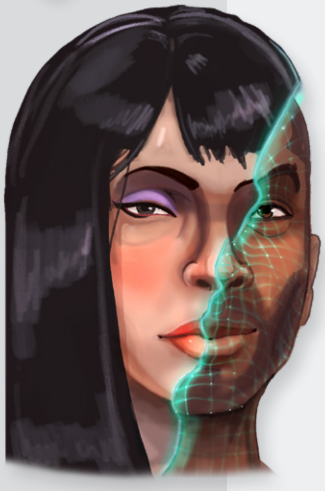
Item	TL	Effect	Kg	Cost
Disguise Kit	3	Aids alteration of appearance	3	Cr200

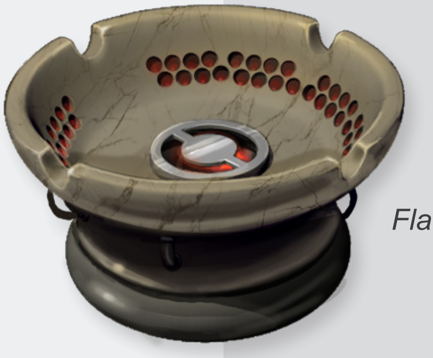
Autobar

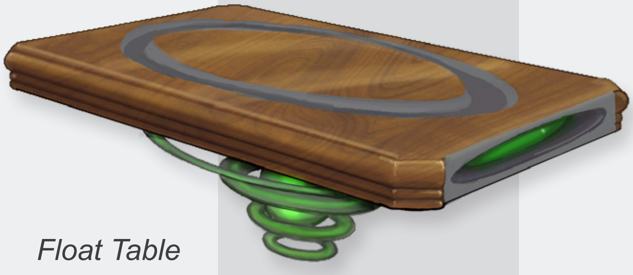
Clothing Consultant

Autolaundry


Disguise Kit


Disguise Net


Flashtray


Float Table

DISGUISE NET

A set of short-range holographic projectors woven into a face-covering net can completely transform a person's appearance. Placed over the head, this net, originally developed to produce 'virtual hair', can mimic the appearance of any individual, real or imagined, creating holographic features that float just above the surface of the net. The net will almost always fool even very close visual inspection but is easily detectable by electronic means. A whole body version is also available; it can be worn above clothing and will completely transform the body. As the net closely follows the contours of a real face or body, alternations are limited to beings of the same general size and shape – slightly larger is possible; smaller is not. The net includes batteries to maintain the disguise for a full day, with wireless recharging possible.

Item	TL	Effect	Kg	Cost
Disguise Net (head)	12	Holographic transformation of head	—	Cr20000
Disguise Net (whole body)	12	Holographic transformation of body	—	Cr100000

ENVIRONMENT REPLICATOR

Designed to be installed within a standard stateroom or similar area, the environment replicator automatically adjusts lighting, temperature and humidity to recreate that found on specific worlds. This is usually done to make Travellers feel more comfortable when light-years away from their homeworld. The environment replicator can be set to make minor changes (to reflect changing times of day or seasons) but does not affect the atmosphere of the room nor the setting of a spacecraft's grav plates, as these are generally controlled globally by a ship's life support systems. This item is often used in conjunction with holographic wallpaper (see page 64) to create a more immersive experience.

Item	TL	Effect	Kg	Cost
Environment Replicator	8	Localises lighting, temperature and humidity	12	Cr2000

FLASHTRAY

The flashtray is a small desktop convenience used to incinerate small items such as cigarettes, sensitive documents, candy wrappers and the like. Any flammable item placed within is reduced to ashes in a matter of seconds.

Built-in fans draw in any smoke or smell resulting from operation. Some flashtrays can be extremely ornate with artistic designs and accents in precious metals.

Item	TL	Effect	Kg	Cost
Flashtray	8	Incinerates small items	0.5	Cr80+

FLOAT TABLE

Float tables come in varying sizes and shapes, measuring from tray to dining table size. Equipped with anti-grav plates, float tables can be positioned in mid-air as desired, forming a ready surface for eating or working. They cannot carry more than their own mass and remain floating but most models can move slowly upon verbal command.

Item	TL	Effect	Kg	Cost
Float Table (small)	10	Tray-sized anti-grav table	1	Cr200
Float Table (large)	10	Desk or dining-sized anti-grav table	4	Cr600

HAIR STYLER

Consisting of a cap placed over the head, this item alters the style of a user's hair within minutes, cutting, dyeing, blow drying, adding extensions according to pre-selected designs. These designs can be updated to match the cultural preferences of newly visited systems. A full body version that encompasses the entire user is also available, intended for use by species such as Aslan and Vargr, although it has never proven popular with the former.

Item	TL	Effect	Kg	Cost
Hair Styler	8	Styles hair within minutes (head only)	2	Cr450
Full Body Hair Styler	8	Styles hair within minutes (full body)	8	Cr1250

HIGH FIDELITY MUSIC SYSTEM

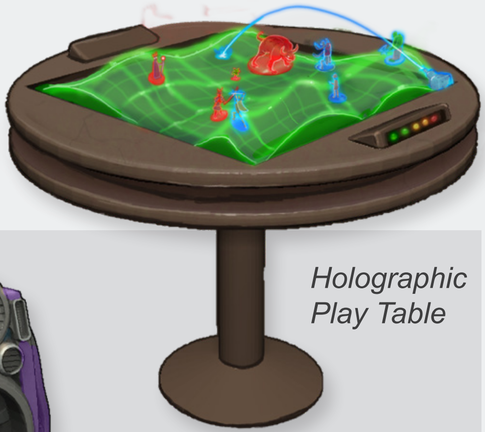
Many Travellers enjoy music as part of their private life, although onboard a ship the excessive volume these systems can produce might not be so private. This is solved at TL11 with the introduction of directional sound output focused in specific and adjustable arcs. However, even at TL6, the sound reproduction of these systems is sufficient to convince all but the most demanding audiophiles that the musicians could indeed be in the same room.

High Fidelity Music System	TL	Effect	Kg	Cost
Basic	6	High quality audio	8	Cr1500
Improved	11	Adjustable sound propagation for privacy	8	Cr4000

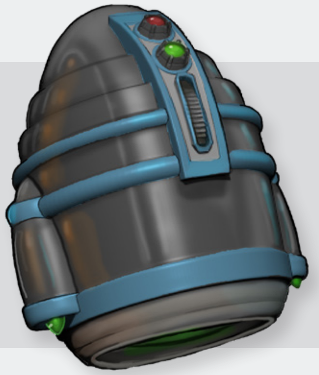
HOLOGRAPHIC PLAY TABLE

Often installed in common areas on board ships, the holographic play table can be used as a normal utility surface when not in use but, upon activation, it generates interactive holographic playing pieces from a database of board and strategy games. The galaxy's most popular games, such as Frontloader, Offbeat, Jump and Dimension, are installed by default and more can be added to suit the Travellers' own tastes. Higher Tech Level versions of this table provide higher quality holographic images in line with that Tech Levels holographic display.

Item	TL	Effect	Kg	Cost
Holographic Play Table	9	Holographic display on table	9	Cr1000



Holographic Play Table



Hair Styler

High Fidelity Music System

HOLOGRAPHIC WALLPAPER

This coating can turn a wall or entire room into a 'window' overlooking a holographic scene. A variety of standard dynamic scenes, static or changing colour schemes, and real-time or delayed images (such as views from outside a ship) are available. Often combined with a high fidelity music system, home theatre and/or environment replicator of at least TL12, holographic wallpaper can transform a room into the centre of an entirely alien world or a completely immersive performance, although interaction with holographic images is not possible. The cost assumes a control unit and wallpaper covering the surface area (walls, ceiling and floor) up to the equivalent of a standard ship's stateroom (four tons). Cost for larger areas scales with volume.

Item	TL	Effect	Kg	Cost
Holographic Wallpaper	12	Holographic walls	9	Cr16000

HOME THEATRE

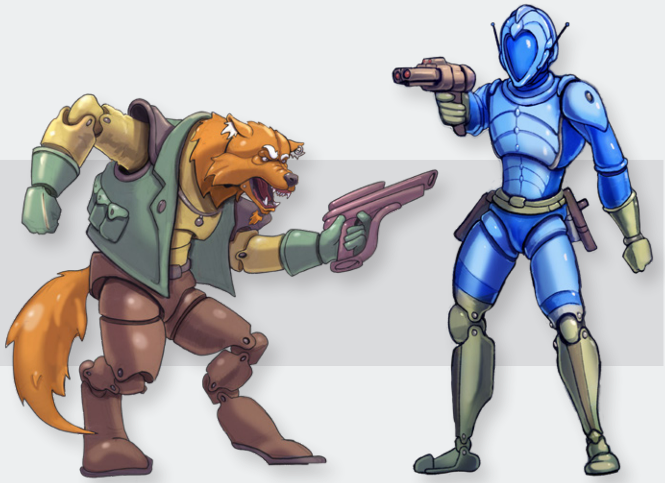
Once Travellers have settled into their home and purchased a music system, a home theatre is often the next thing on the list, allowing them to watch the latest vids as the directors truly intended (so they tell themselves). Even with the appearance of technologies such as flat and flexible screens, a home theatre is a bulky item up to TL8. At TL9, screens can be 'painted' or 'pasted' onto a wall or other flat surface and combined with powerful but low profile speakers, taking up relatively little space. Beyond this, 3D and holographic technologies allow an entire room to become the centre of a home theatre, placing the Traveller in the centre of the action.

Home Theatre	TL	Effect	Kg	Cost
Basic	8	Flat screens and surround sound	30	Cr4500
Improved	9	Wallpaper screens and speaker network	20	Cr12000
Advanced	11	+Holographic projection	9	Cr36000

LORDS OF SPACE

A spiralling craze on some worlds, Lords of Space are small 30-centimetre-tall animatronic toys that, when activated, are programmed to react to one another in a variety of patterns. They tend to be based upon various alien species, careers and notable personalities. While a few basic models are readily available (such as the Droyne worker), others (the Aslan Assassin comes to mind) are made in very short runs that drives the market into a frenzy when they are released. They can consequently be very hard to find but more than a few Travellers are driven to collect them all. Referees should always roll for Availability (see page 4) when a Lord of Space is sought after. Some Travellers have invented games that pit Lords of Space against one another (see miniatures wargame for details on how to play these games).

Item	TL	Effect	Kg	Cost
Lords of Space	10	Animatronic action figures	1	Cr250+



MINIATURES WARGAME

Often denigrated as simply being toy soldiers, miniatures wargames allow their players to construct, paint and field large armies or fleets on a tabletop surface. The armies can range from anything in history or fiction and may feature land, air, sea or space-bound forces. Players make opposed Tactics (naval or military) checks (1D hours, INT or EDU) to determine winners. At early Tech Levels, the miniatures used are fairly crude, although these progress in quality as Tech Levels increase. Serious players should regard the costs listed as a type of monthly 'subscription' rather than a one-off purchase.

Miniatures Wargame	TL	Effect	Kg	Cost
Basic	1	Wood, metal, or card miniatures	1	Cr25
Improved	8	Plastic or 3D printed	1	Cr250
Enhanced	10	Animatronic	1	Cr2500
Advanced	11	Holographic	1	Cr25000

PERSONAL SAFE

Not every Traveller trusts their shipmates and the personal safe provides a measure of safety for valuables. Personal safes are large enough to store documents and a couple of pistols or similar-sized objects. A locker-sized safe, suitable for storing up to 40 kilograms of rifles or similar sized objects, is available for 10 times the mass and cost of the personal safe.

Safes available prior to TL8 are purely mechanical in nature, requiring Mechanic checks to force open. More advanced models have an electronic component, requiring Electronics (computers) to enter. Intrusion software packages (see page 71) can aid attempts to bypass an electronic safe. As with other software Intrusion checks, the relative Tech Level difference between the safe and the computer used to crack it acts as a DM to the task, and safe locks of higher Tech Level than the Intrusion package are effectively immune from electronic bypass.

Use of brute force, such as cutting through the safe with lasers or using explosives are still possible, but may damage the contents of a safe or leave evidence of compromise. Treat a safe as having armour equal to twice its Tech Level; four points of damage (20 for the locker) is sufficient to compromise a personal safe and extract its (surviving) contents.

Personal Safe	TL	Intrusion check	Kg	Cost
Basic	4	Difficult (10+) Mechanic	5	Cr150
Improved	6	Very Difficult (12+) Mechanic	4	Cr250
Enhanced	8	Very Difficult (12+) Electronics (computers)	3	Cr400
Advanced	12	Formidable (14+) Electronics (computers)	3	Cr600
Personal locker safe	—	—	x10	x10

REMEMBRANCE HOLOGRAM

This is a small device that fits easily into the palm which, when activated, projects a pre-programmed 20–30 centimetre image of a person. These are often persons close and dear to the owner of the device but who have departed from the universe of the living, most often family members, although some Travellers may keep a remembrance hologram of a close companion. There is also a market on some worlds for remembrance holograms depicting recently deceased celebrities – these are often much more expensive. At higher tech levels, these holograms become increasingly life-like.

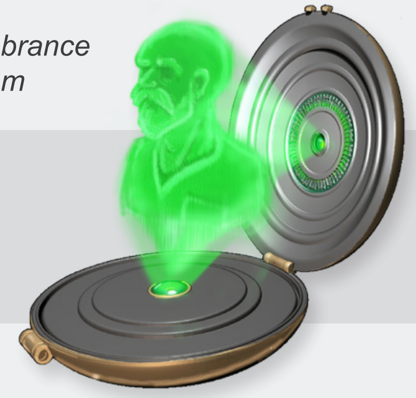
Item	TL	Effect	Kg	Cost
Remembrance Hologram	9	Holographic figure	—	Cr250

SLEEP INDUCER

Consisting of a framework attached to the head of a bed, the sleep inducer is a programmable system influencing brain waves to encourage first sleep and then alertness. No longer waiting to fall asleep naturally, a Traveller can now programme downtime to the minute. At the end of the programmed sleep period, the sleep inducer functions as a silent alarm clock.

Item	TL	Effect	Kg	Cost
Sleep Inducer	10	Induces sleep and wakefulness	2	Cr1000

Remembrance Hologram



Miniatures Wargame

Personal Safe

SONIC SWEAT AND STAIN REMOVER

Just what a busy Traveller needs to spruce up clothes and armour after a particularly noisome mission. Using the very latest vibe technology, just swipe this magic wand over any annoyingly stubborn stain or odour and watch it disappear.

Item	TL	Effect	Kg	Cost
Sonic Sweat and Stain Remover	13	Cleans clothes and armour as a Significant Action	1	Cr125

SPHERE OF SOLACE

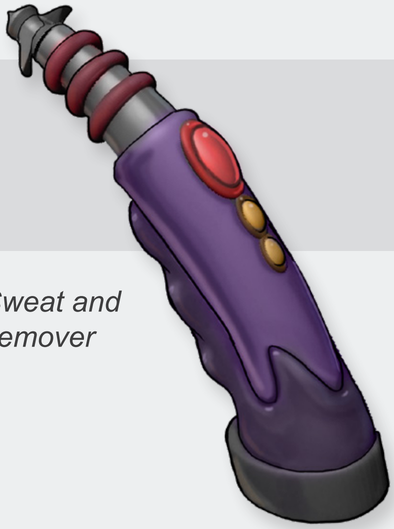
Using active sound-cancelling technology, the sphere of solace creates an adjustable area of silence through which only the loudest sounds are capable of penetrating (if a battle is going on between shipmates using the sphere versus the high fidelity music system, highest Tech Level will win…). This is used to create a zone over up to five metres in radius where a Traveller can enjoy both peace and quiet.

Item	TL	Effect	Kg	Cost
Sphere of Solace	10	Creates 5 metre radius sphere of silence	1	Cr500

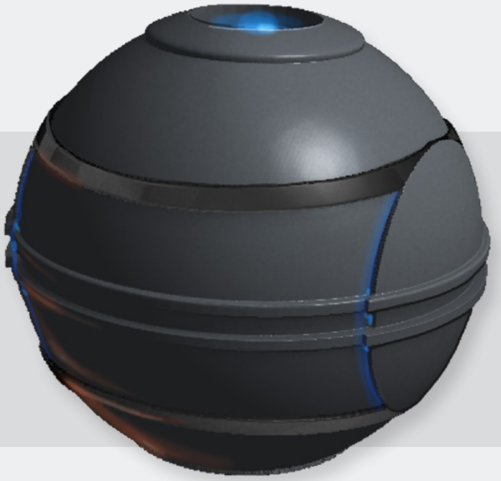
VIVARIUM

This is a self-contained living area with adjustable environment controls intended for the keeping of exotic and alien pets. Temperature, light and atmosphere are all selectable, allowing a Traveller to keep a favourite pet close by at home or in their stateroom. Vivaria come in different sizes, rated below as to the size of animals that can be kept in them by the total number of their Hits.

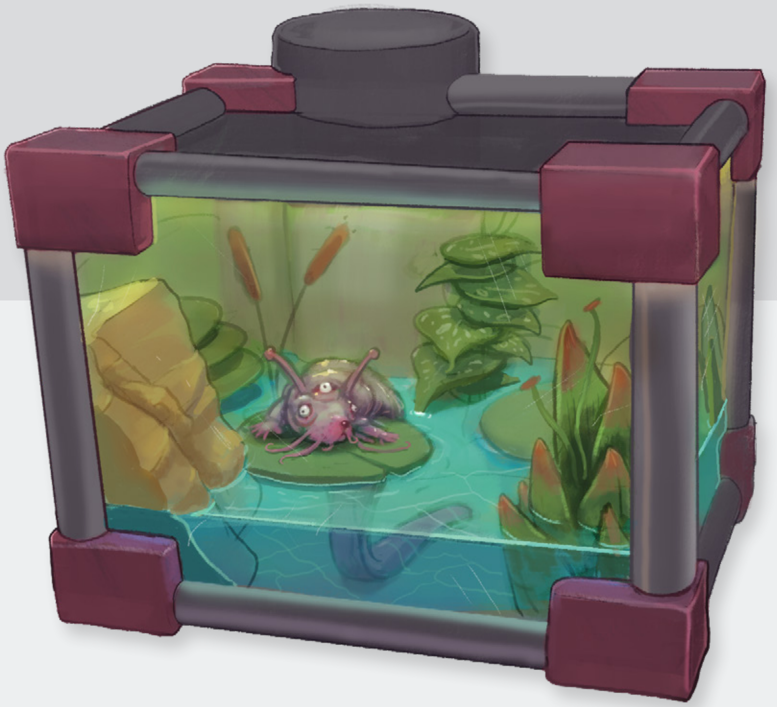
Vivarium	TL	Size of animal	Kg	Cost
Small	8	1–2 Hits	2	Cr400
Medium	8	3–5 Hits	4	Cr1000
Large	8	6–10 Hits	8	Cr2200



Sonic Sweat and Stain Remover



Sphere of Solace



Vivarium

VR GOGGLES

This projects a virtual reality (VR) environment to the wearer's eyes. The goggles come with a pair of gloves to allow the wearer to interact with the environment and a headset allows two-way audio interaction. The basic unit uses differences in the images projected to each eye to simulate a 3D environment, whereas goggles at TL10+ use holography. These allow only limited immersion based on external stimulus, with TL10+ units providing tactile feedback to the gloved hands. An augmented reality (AR) mode allows the goggles to operate as an overlay, inputting virtual aspects into the real environment. The TL12 version has less mass and better holography, and the components can pass as regular glasses, earbuds and gloves, but for a truly immersive experience, users gravitate towards VR helmets and immersion chairs.

VR Goggles	TL	Effect	Kg	Cost
Basic	8	VR/AR vision, hearing	1	Cr500
Improved	10	+Holographic environment, tactile feedback	1	Cr1000
Advanced	12	Lightweight	—	Cr1000

VR HELMET

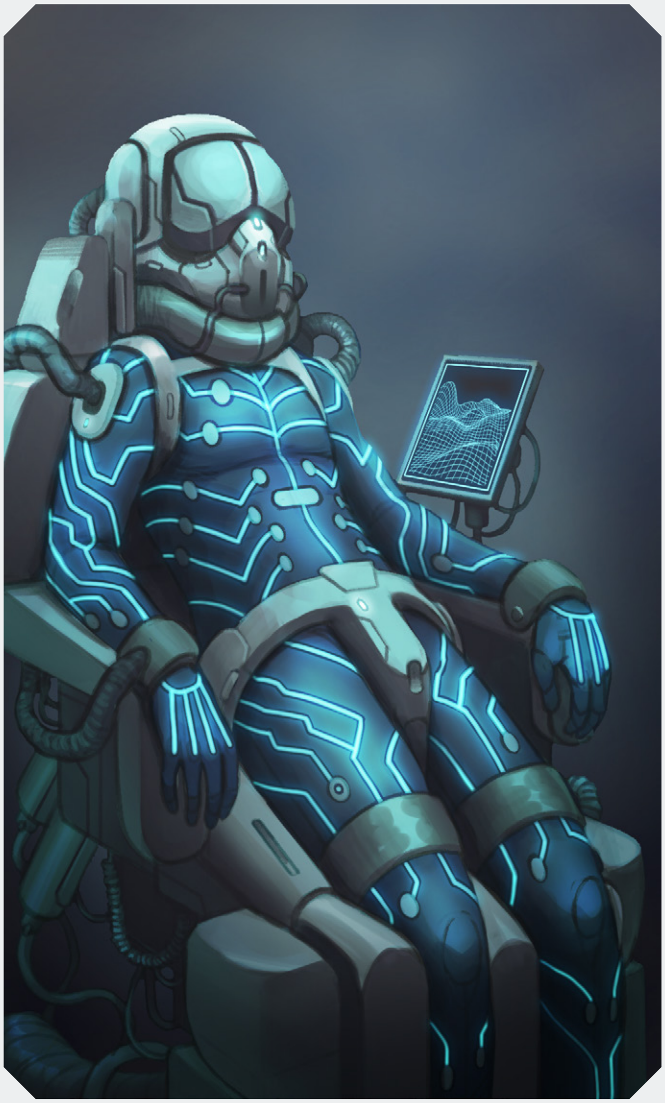
A VR helmet allows for deeper immersion than VR goggles. The TL9 version covers the entire head with a helmet equipped with a pull-down visor and comes with standard VR gloves; it provides the same functions as improved VR Goggles at an early Tech Level. The TL11 helmet exceeds what is possible with mere goggles. Its helmet lining consists of hundreds of external brain stimulation interfaces capable of directly actuating the wearer's brain. This allows for the emulation of real sensory perception, including full-body tactile sensation, smell and taste but it is still a heavy item with limited battery life. The TL13 helmet is not only much lighter but extends battery life from eight hours to a full day. Helmets can be connected to external power sources for longer uninterrupted use, although this may limit mobility.

VR Helmet	TL	Effect	Kg	Cost
Basic	9	VR/AR immersion as Improved VR Goggles, 4 hours	2	Cr2000
Improved	11	brain stimulation for full sensory VR, 8 hours	1.5	Cr5000
Advanced	13	Lightweight, 24 hour battery	—	Cr5000

VR IMMERSION CHAIR

A VR immersion chair provides the ultimate VR experience. This item consists of a large armchair and a linked VR helmet. The chair provides the processing power, medical monitoring and safety for a user brought into a lucid dream-like state with their nervous system temporarily disconnected from their body. This allows full immersion in a virtual world. The process of VR immersion takes a full minute and 'extraction' requires 1D combat rounds (6–36 seconds) as the body 'awakens'. An optional extended immersion kit includes medical-grade connections for feeding, waste disposal and muscle conditioning without terminating the VR state, allowing an experience to last indefinitely.

Item	TL	Effect	Kg	Cost
VR Immersion Chair	13	Full immersion VR	150	Cr200000
Extended Immersion Kit	13	+Indefinite immersion	10	Cr200000



MEDICAL AND CARE SUPPLIES

Deprived of their tools, even the most highly trained doctors can struggle to treat the patients they are trying to cure. However, with the right equipment, just a little medical training can make all the difference when Travellers find themselves in the deep wilderness.

Others might find more… recreational uses for some of the medical supplies listed in this section but the canny retailer does not judge his customers.

MEDICAL EQUIPMENT

Many items in this section, such as medical kits, may require occasional replenishment of consumables. If the Referee desires to track such things, these kits carry supplies for approximately 10 uses and consumables account for a quarter of the cost of the kit (clearly, this does not apply to expensive items such as autodocs but it might apply to the medikit-like consumables carried within).

ADHESIVE BANDAGES

Originally used in small tubes to seal up bullet holes in flesh in a hurry, this chemical glue is very strong, instantly turning the moisture within muscles into plastic. The applicators change as technology gets better but the substance remains essentially the same. The use of adhesive bandages during First Aid subtracts DM-1 from any dice rolled to determine how long a task takes.

Item	TL	Effect	Kg	Cost
Adhesive Bandages	6	DM-1 per dice for First Aid duration checks	—	Cr50

AUTODOC

An autodoc is a small self-contained diagnostic, pharmaceutical and surgical system about the size of a low berth chamber or large coffin. Often found on spacecraft, the autodoc is a stationary robot capable of diagnosing and treating disease, infection, injuries and other medical conditions as efficiently as a qualified doctor. The basic autodoc has the equivalent of Medic 3 and Science (biology) 2 skills.

A TL14 improved autodoc is capable of reanimation, provided no more than 2D minutes have passed since the patient's death. This period can be doubled by extremely cold conditions or extended up to 1D days if the patient's corpse has been placed in a low berth or cryoberth, although revival survival checks still apply. The improved autodoc includes an integral low berth and a bioreactor capable of regrowing limbs or organs. It has the equivalent of Medic 3 and Science (biology) 3 skills.

The advanced or 'deluxe' TL15 autodoc includes a fabrication chamber capable of both regenerating tissue and crafting simple augments. Its advanced sensors (bioscanner and NAS) and science toolkit allow it to perform investigative work to analyse unknown illnesses or other medical conditions. Its skills include Investigate, Medic, Science (biology) and (chemistry), all at skill level 4.

Most autodocs match the form of standard ship low berths, allowing a replacement or 'upgrade' of a low berth to an autodoc in a medical bay or low passenger bank mounting.

Autodoc	TL	Features	Kg	Cost
Basic	13	Diagnosis, drug delivery, surgery, Medic 3	500	Cr100000
Improved	14	+Reanimation, low berth, bioreactor, Medic 3	500	MCr1
Advanced	15	+Advanced sensors, science toolkit, Medic 4	500	MCr3

BIOREACTION CHAMBER

A bioreaction chamber, sometimes called a 'bioreactor' or a 'vat', is a device which supports a biologically active environment. It can be used to grow cultures and organisms or to support a growing biological being, including a human foetus or developing clone. Bioreaction chambers are available in varying sizes based on their capacity in cubic litres (cl); this corresponds roughly to an organism's mass in kilograms. A 12cl unit will support a human foetus to full term and an 80cl unit will support a full human clone to average adult size. A bioreaction chamber is a sealed environment but does not provide hostile environment or vacuum protection. Mass and cost are indicated per cubic litre of capacity and do not include the mass of the biological entity grown or the cost of any ‘raw materials’.

A TL6 basic bioreaction chamber can support the growth of microbes with a simple nutrient feed mechanism. This provides the basis for growing medicinal organisms, simple feedstock and biomass fuel sources. A TL8 improved chamber allows the growth of tissues. It can grow skin, muscles or artificial meat fit for consumption.

The TL10 enhanced chamber can grow a complete organism, for instance carrying a mammal from conception to birth. The enhanced chamber can grow a fertilised embryo or cloned organism to full term in a normal gestation period or at accelerated growth up to 12 times normal rate with access to power and stored nutrients. The TL13 advanced chamber can act as a growth accelerator, increasing the growth rate of tissues or complete organisms by up to 50 times; this greatly increases the maturation of the organism, potentially producing a fully grown human in less than five months, although perhaps at the expense of its long-term viability.

All bioreaction chambers require organic feedstock mass of at least the equivalent mass of their finished ‘product’. It is possible to insert an organism’s genetic source material and a few additive nutrients into an advanced bioreaction chamber and see a fully grown clone emerge four to five months later.

Bioreaction Chamber	TL	Complexity	Kg per Litre	Cost per Litre
Basic	6	Microbes	5	Cr1000
Improved	8	Tissues	4	Cr2000
Enhanced	10	Complex organisms, x 12 growth	3	Cr5000
Advanced	13	x 50 Accelerated growth	2	Cr20000

CRYOBERTH

A cryoberth, or ‘icebox’ is a coffin-like machine similar to the low or frozen berths used on some spacecraft. Unlike a low berth, a cryoberth is designed to quickly (within one combat round) freeze an individual, usually in response to severe medical trauma. This process carries inherent risk and the individual must perform a low berth survival check on entry and exit from cryoberth-induced hibernation (see *Traveller Core Rulebook*, page 156). Medical skills applied to aid entry cyroberth survival checks are considered rushed, lowering an applicable medical skill by DM-2, and are often counterproductive if no qualified individual is available. At TL12 survival checks receive DM+1.

A cryoberth is typically used to place severely injured patients into stasis until they receive medical treatment. The cryoberth’s internal power system can function for up to one week on its own batteries but they are usually connected to a vehicle or ship power supply.

Cryoberth	TL	Effect	Kg	Cost
Basic	10	Freeze injured patient within six seconds	200	Cr50000
Improved	12	DM+1 to survival checks	200	Cr50000

FIELD SURGICAL KIT

This is a backpack-sized medical and basic surgical kit for doctors, combat medics and paramedics. The kit contains drugs, surgical supplies and diagnostic equipment as well as very basic surgical tools. This allows a medic to perform First Aid without penalty.

A field surgery kit provides all the necessary equipment required for most basic (or desperate operations). Tools for performing surgery including scalpels, saws, forceps, sutures with needle drivers and surgical string. The kit is basic but fulfils the same functions as its more advanced medikit cousins. This kit does not include anaesthetics or other drugs. The field surgical kit is a very basic set of workmanlike tools and surgery performed using these tools will suffer DM-2 to Medic checks.

Item	TL	Effect	Kg	Cost
Field Surgical Kit	5	Kit for First Aid (DM+0) and surgery (DM-2)	3	Cr1500

FIRST AID KIT

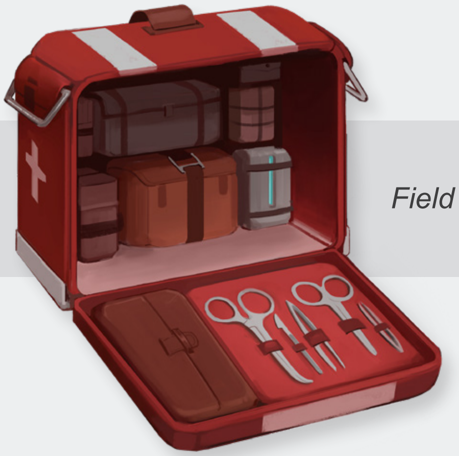
At low Tech Levels, a First Aid kit consists of little more than material for a splint and a few herbs and plants reputed to have medicinal qualities – but it is better than nothing. At higher Tech Levels, clean bandages, safety pins, sutures with needle drivers and basic pharmaceuticals (antibiotics, painkillers and possibly alcohol to sterilise wounds) are added. First Aid performed using the TL2 kit will inflict DM-2 to Medic checks, while at TL5 the penalty drops to DM-1. More effective treatment requires use of a field surgical kit or a medikit.

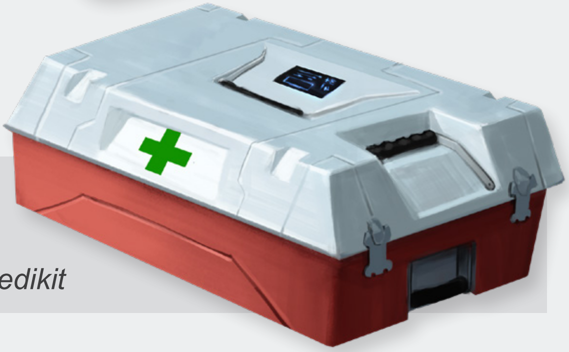
First Aid Kit	TL	Features	Kg	Cost
Basic	2	First Aid Medic check DM-2	—	Cr10
Improved	5	First Aid Medic check DM-1	—	Cr125

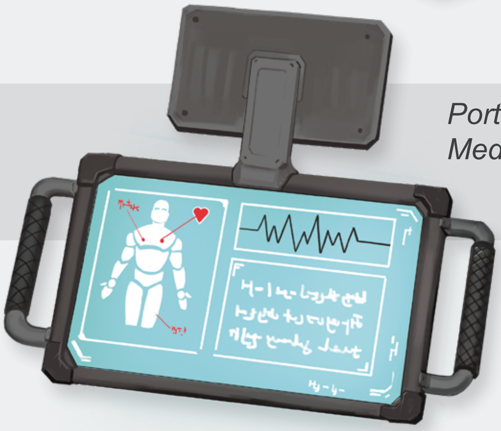
MEDIKIT

The components of medikits change with different Technology Levels. All medikits contain diagnostic devices and scanners, surgical tools and a panoply of drugs and antibiotics, allowing a medic to practice their art in the field. More advanced-medikits can help with more exotic problems or when treating augmented individuals. For example, a TL8 medikit can test blood pressure and temperature, while a TL14 kit has a medical densitometer to create a three-dimensional view of the patient's body and can scan brain activity on the quantum level. TL10 medikits grant DM+1 to Medic checks made to perform First Aid. This rises to DM+2 at TL12 and DM+3 at TL14. All medikits allow field surgery to be performed, with a general DM-2 to the Medic check but the DM for First Aid also applies, negating some of the risk.

Medikit	TL	Features	Kg	Cost
Basic	8	First Aid Medic check DM+0	1	Cr1000
Improved	10	First Aid Medic check DM+1	1	Cr1500
Enhanced	12	First Aid Medic check DM+2	1	Cr5000
Advanced	14	First Aid Medic check DM+3	—	Cr10000


Field Surgical Kit


Medikit


Portable Mediscanner

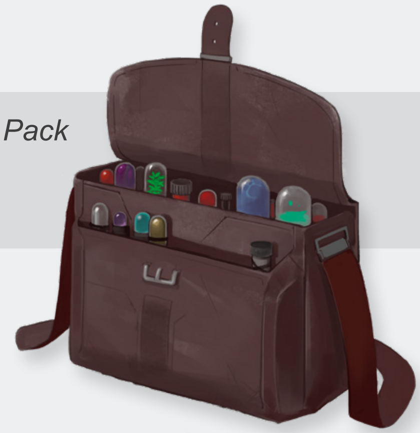
PERSONAL AUTOMEDIC

A personal automedic is an automated drug dispenser tailored to a specific user's body chemistry. This item is normally a patch attached to the torso but it can be installed subcutaneously. It monitors the wearer's bio-signs for changes, then dispense anti-toxins, antibiotics, stimulants, sedatives and other pharmaceuticals required to keep the user at peak efficiency or to prevent collapse. Under normal conditions a personal automedic will need to be restocked and the batteries recharged every four weeks (at a cost of Cr500).

In the event of poisoning or infection, a personal automedic will administer a specific antidote if it possesses it and recognises the threat (as determined by the Referee), neutralising the poison or disease immediately. If not, it will react to general symptoms and use general or broad-spectrum remedies as its database thinks best. In many instances (as determined by the Referee) the personal automedic provides a DM+1 to checks made to overcome poisons or diseases, even if an exact counteragent is not available.

Most automedics are also equipped to store and dispense a single dose of hibernation Fast Drug (purchased separately, see page 93) should it ever be needed. If the wearer is seriously injured or dying the automedic will automatically use this drug to slow bleeding, delay shock and/or conserve oxygen. The wearer can also manually activate this drug at any time if needed. If desired, this can be replaced with a dose of some other drug. A personal automedic also provides all of the benefits of a personal mediscanner.

Item	TL	Effect	Kg	Cost
Personal Automedic	11	Monitor, diagnostic tool, auto-drug dispenser	—	Cr15000



Trauma Pack

PERSONAL MEDISCANNER

This is a small monitoring unit normally worn on the belt or upper arm. A personal mediscanner monitors a wearer's life signs, including blood composition, blood sugar and body temperature. It warns when exhaustion or dehydration are imminent, gives information to the wearer or medical personnel about poisoning or other hazardous conditions and allows quick diagnosis of ailments. Using the information from a personal mediscanner provides DM+1 on Medic checks.

Item	TL	Effect	Kg	Cost
Personal Mediscanner	12	Personalised medical monitor, diagnostic tool	—	Cr1000

PORTABLE MEDISCANNER

This is a larger version of the personal mediscanner for use by field medics. The device is not optimised for a single individual and takes 1D minutes to calibrate itself to each new subject. It gives the same data as the personal version (although with slightly less detail), providing DM+1 on Medic checks once it has finished its analysis. Add-on chips for alien species are available for Cr500 each.

Item	TL	Effect	Kg	Cost
Portable Mediscanner	12	Monitor, diagnostic tool	1	Cr2000

TRAUMA PACK

The trauma pack is a vital device carried by battlefield medics and first responders. It is a small satchel of chemicals and drugs used to pump life back in a wounded body. Unsubtle (and deadly in multiple doses), the chemicals can make a patient ignore wounds for a few hours – hopefully enough time to get them to a proper medical facility. The use of a trauma pack requires a Medic check but will restore 1D END to a wounded patient. This END can be used to bring a technically 'dead' patient back from 0 END, so long as their last wound was suffered within 1D rounds. This regained END lasts for 1D hours, at which point it vanishes, potentially killing the patient. A patient can only benefit from the administration of a trauma pack once per day.

Item	TL	Effect	Kg	Cost
Trauma Pack	8	Field recovery of 1D END for 1D hours	2	Cr750

DRUGS AND PHARMACEUTICALS

Unless otherwise stated, cost is for each dose of drug. Drugs may aid the Traveller in many ways, however even strictly medical drugs are often restricted and some drugs have significant side-effects, including addiction and withdrawals.

ADRENALISER

An injected cocktail of alien adrenalines, this drug is used to keep the user awake and active for many hours at a time. Although it is known to have a detrimental 'crash' when it wears off, soldiers on patrol duty will sometimes use adrenaliser to stay alert and it tends to be very popular among medical students. One dose of the drug is the equivalent of 10 hours of sleep and enables a user to function for the next 36 hours without penalty, after which they will have 2D x five minutes to find someplace to lay down – because the amount of lost sleep will hit them without fail at the end of that time.

Initial recovery requires 10 or more hours of rest. Taking additional adrenaliser drugs during this period will keep the user awake but effective DEX and INT will decrease by one per hour until the user begins a sleep period; recovery of lost characteristics points (at one per hour) does not begin until after the user has slept for 10 hours.

Item	TL	Effect	Kg	Cost
Adrenaliser	10	Allows 36 hours of alertness	—	Cr150

ANAGATHICS

These drugs slow the Traveller's aging process. Synthetic anagathics become possible at TL15 but there are some natural spices and other rare compounds that have comparable effects, although all are illegal or heavily controlled on many worlds. One dose must be taken each month to maintain the anti-aging effect.

Item	TL	Effect	Kg	Cost
Anagathics	15	Pauses aging process for one month	—	Cr20000

ANTI-RAD

Anti-rad drugs must be administered before or immediately (within 10 minutes) after radiation exposure. They absorb up to 100 rads per dose. A user may only use anti-rad drugs once per day – taking any more causes permanent END damage of 1D per dose, although these subsequent doses do absorb additional radiation.

Item	TL	Effect	Kg	Cost
Anti-rad	8	Absorbs up to 100 rads	—	Cr1000

ANAGATHICS WITHDRAWAL

Anagathics are always expensive, often illegal and are based on a variety of methods. These include synthetic molecules, exotic biology and nanomachinery. All of these pause the aging process but once a Traveller begins an anagathics regimen they must remain on the same treatment. Failure to continue the treatment can have side-effects beyond the resumption of aging.

If more than 30 days passes between doses, aging will resume on a one-to-one daily basis but the body will also begin to suffer from the absence of the age-negating substance. After 53 + 2D days has passed since the last dose, the Traveller suffers a withdrawal effect and must make a Difficult (10+) END check. Failure results in the Traveller aging a number of years equal to the negative Effect and temporarily losing END equal to the Effect. The Traveller recovers END at one per day as the body adjusts to an anagathics-free state.

If the check is successful, the Traveller still continues to age but must make a subsequent check after as many months as the positive Effect. A second successful check indicates the Traveller has successfully avoided withdrawal symptoms. A failure of this second check results in milder symptoms: the Traveller still experiences the temporary END loss but only ages the number of months equal to the Effect.

As long as the Traveller resumes anagathics treatment before suffering a withdrawal effect, the only detriment to intermittent or stretched-out use of anagathics is the resumption of aging after 30 days. If the Traveller switches to a different method of anagathics treatment, then withdrawal effects from the previous method still occur.

COMBAT DRUG

Combat drugs enhance reaction times and improve a body's responses to trauma. Users of combat drugs gain DM+4 to all initiative rolls. They also gain a free Reaction every round with no penalty applied and reduce all damage sustained by -2 points per attack. The drug kicks in around 18 seconds (three rounds) after injection and lasts for around 10 minutes. When the drug wears off, the user is Fatigued (see the *Traveller Core Rulebook*, page 80).

Item	TL	Effect	Kg	Cost
Combat Drug	10	DM+4 to initiative, free Reaction, -2 damage	—	Cr1000

FAST DRUG

Also called Hibernation, this drug puts the user into a state akin to suspended animation, slowing their metabolic rate down to a ratio of 60:1 – a subjective day for the user is actually two months. Fast Drug is normally used to prolong life support reserves or as a cheap substitute for a cryoberth. An antidote is available for the same cost. Both the drug and its antidote take effect nearly immediately – in the combat round following administration – although fully awakening from the drug's effects can take a few (1D) hours, during which time the user's physical characteristics increase from 1 to their normal (or wound-adjusted) level at a steady rate.

Item	TL	Effect	Kg	Cost
Fast Drug	10	Hibernation: slows metabolism by 60:1	—	Cr200

G-TOLERANCE DRUG

A G-tolerance drug has two uses: increasing a body's ability to withstand uncompensated high-G manoeuvres for relatively short periods and aiding in acclimation to high-gravity worlds. The long-acting acclimation version comes in a patch and will provide a full day of tolerance to environments up to 2G. Each dose advances acclimation by a further day, allowing long-time use of these patches to alleviate the need to continue them in half the time a user would typically need for acclimation.

The short-term injectable version increases G-tolerance by one G for one hour. This effect is instantaneous and will stack with the benefits of a G-suit (see page 106) for tolerating high-G manoeuvres. A voice or radio activated auto-injector (Cr500) for up to 20 doses (sold separately) of this drug is often built into seats of vehicles expected to engage in such manoeuvres and is often available to G-suits or hostile environment vacc suits.

Taking multiple doses of G-tolerance drugs in either form will increase their benefits but each additive dose risks causing a burst blood vessel or the tearing of muscles. For each dose beyond the first, the user must make an immediate Simple (2+) END check with a negative DM equal to all doses taken within the hour. Negative Effects are applied as damage and this check must be performed every time another dose is taken until no drug remains in the user's system.

Item	TL	Effect	Kg	Cost
G-Tolerance Drug Patch	9	Negates effect of +1G, speeds acclimation	—	Cr20
G-Tolerance Drug Injection	9	Negates effect of +1G, speeds acclimation	—	Cr100
G-Tolerance Drug Auto-Injector	10	voice or radio activated for up to 20 doses	—	Cr500

INHIBITOR DRUG

Psionic inhibitors dampen the brain's ability to generate psychic effects. A user who takes (or, more often, is forcibly injected with) an inhibitor drug suffers DM-2 to all PSI-related checks and cannot regain PSI points. Each hour, the user may make an END check to throw off the effects of the drug. Inhibitor drugs have no effect on non-psionic individuals.

Item	TL	Effect	Kg	Cost
Inhibitor Drug	9	DM-2 to PSI checks and no regaining of points	—	Cr500

MEDICINAL DRUGS

Includes vaccines, antitoxins and antibiotics. They range in cost from Cr5 to several thousand Credits, depending on the rarity and complexity. Medicinal drugs require the Medic skill to use properly – using the wrong drug can be worse than doing nothing.

Item	TL	Effect	Kg	Cost
Medicinal Drug	5+	Treat specific disease or condition	—	Cr5+

META-PERFORMANCE ENHANCER

Also called the Titan Drug, this boosts the user's STR by 1D points. Working in a similar fashion to how some stimulants can enhance strength, the Titan Drug does the same thing without the dangerous side effects. The drug kicks in one minute (10 rounds) after injection and lasts for around 15 minutes. When the drug wears off, the user's muscles will cramp painfully under the stress and fatigue. They suffer 1D damage and their STR is reduced to 1D for 1D hours (or to their original STR if it is lower).

Item	TL	Effect	Kg	Cost
Meta-performance Enhancer	10	After 1 minute: +1D STR for 15 minutes	—	Cr600

METABOLIC ACCELERATOR

This boosts the user's reaction time to superhuman levels. To the user, everyone else appears to be moving much slower. A Traveller using a metabolic accelerator in combat gains DM+8 to all Initiative rolls. They also gain two free Reactions every round with no penalties applied for either. The drug kicks in 45 seconds (7–8 rounds) after ingestion or injection and lasts for around 10 minutes. When the drug wears off, the user's system crashes. They suffer 2D points of damage and become Fatigued (see *Traveller Core Rulebook*, page 80).

Item	TL	Effect	Kg	Cost
Metabolic Accelerator	10	DM+8 to initiative, two free Reactions	—	Cr2000

NERVOUS RESPONSE DAMPENER

This 'battlefield vitamin' is a mild anti-anxiety drug, helping users cope with the horrors of war. Taken a few hours before battle, the dampener lasts for about a day, granting the user DM+2 to any checks related to avoiding fear or shock, including Morale checks, for 2D x 3 hours.

Item	TL	Effect	Kg	Cost
Nervous Response Dampener	9	DM+2 to fear and shock checks for 2Dx3 hours	—	Cr100

NULL DRUG

Used to dampen the psionic abilities of others, null is a general classification of anti-psionic chemicals injected into the target. Once injected, the drug takes 2D minutes to take effect, completely shutting off psionic ability for 2D hours. No psionic powers may be used during this time.

Item	TL	Effect	Kg	Cost
Null Drug	16	Completely shuts off psionics for 2D hours	—	Cr5000

PANACEAS

These are wide-spectrum medicinal drugs specifically designed not to interact harmfully. They can therefore be used on any wound or illness and are guaranteed not to make things worse. Anyone administering or using panaceas may make a Medic check as if they had Medic 0 when treating an infection or disease. Negative Effects of a skill check using panaceas will not cause damage to the patient.

Item	TL	Effect	Kg	Cost
Panaceas	8	No unskilled Medic penalty when used	—	Cr200

PSI-DRUG

These drugs restore PSI if taken when the user has already spent PSI points or temporarily increase the user's PSI if taken when at full strength.

A user who takes more than one dose of Standard or Double Psi-Drug, or a single dose of the Special drug, must make an END check with DM-1 per dose of psi-drug taken in the last week. If the check is failed, the user falls ill, suffering 3D damage and permanently reducing PSI by one.

Item	TL	Effect	Kg	Cost
Psi-Drug (standard)	8	3 PSI restored, +2 boosted	—	Cr1000
Psi-Drug (double)	8	6 PSI restored, +4 boosted	—	Cr4000
Psi-Drug (special)	8	9 PSI restored, +6 boosted	—	Cr10000

RADIATION EMERGENCY APPLICATOR

A type of emergency anti-rad drug cocktail, these one-use pneumatic syringes can be triggered to punch through clothing or armour granting up to Protection +2, pumping seven different chemicals into the recipient. So long as the applicator is used within one hour of receiving a dose of radiation, the recipient's rads are reduced by 1D x 10. No matter how much or quickly the applicator is used, intense and steady vomiting will occur for 1D minutes after use, effectively reducing DEX to 1 and movement to half. Taking additional doses or combining this drug with anti-rad will reduce radiation levels further at the cost of another 1D minutes of vomiting, dry heaving by this point, and a permanent reduction of DEX and END by 1 for each additional dose, in addition to any negative effects of multiple Anti-rad doses if applicable.

Item	TL	Effect	Kg	Cost
Radiation Emergency Applicator	10	1D x 10 rad reduction, vomiting for 1D minutes	—	Cr200

RECREATIONAL DRUGS

Recreational drugs vary widely in both cost and effect across the galaxy. Many cultures have legal recreational drugs, such as alcohol. However, most legal drugs are relatively mild in effect but harmful in large doses. More potent drugs are usually illegal, especially those affecting the user in such a way as to make them dangerous to others. Manufacturers and suppliers will charge whatever the market will stand. These drugs are often subject to addiction and withdrawal effects and may contain (more) harmful contaminates or poisons. Some may actually provide some medical benefit.

Item	TL	Effect	Kg	Cost
Recreational Drugs	1+	Generally bad	—	Cr10+

SLOW DRUG

This is a variant of the metabolic accelerator. It can only be applied safely in a medical facility where life-support and cryotechnology is available, as it increases the metabolism and aging to around 30 times normal for one day, allowing a patient to undergo a month of healing in a single day. Using this drug outside of a hospital or sickbay is a messy and painful way to commit suicide, as the user will rapidly cook their internal organs and suffer massive brain damage. A user on unsupervised Slow Drug lapses into feverish unconsciousness within 1D rounds and will begin suffering one point of damage every minute if not treated in a TL8+ medical facility; once END reaches 0, the user's INT will begin to decrease permanently by -1 per minute. Fast Drug will neutralise Slow Drug but drug interactions will cause an immediate 2D damage.

Item	TL	Effect	Kg	Cost
Slow Drug	11	Speeds metabolism by 30:1 to quicken healing	—	Cr500

STARLIGHT DROPS

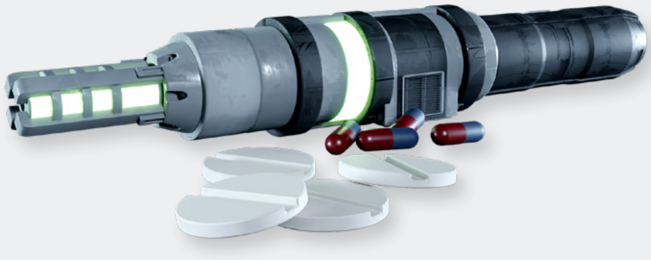
These eye drops enhance the user's vision dramatically. By adding a few drops of this stinging liquid into each eye and waiting for the burning sensation to pass, the user gains the IR Vision trait (see the *Traveller Core Rulebook*, page 85). The effects of the drug last for 1D hours, during which time the user's eyes take on a silvery and cloudy appearance. A dropper of starlight drops contains six doses.

Item	TL	Effect	Kg	Cost
Starlight Drops	12	IR vision for 1D hours, 6 doses	—	Cr500

STIMS

These remove fatigue, although at a cost. A Traveller who uses stims removes Fatigue (see the *Traveller Core Rulebook*, page 80) but also sustains one point of damage. If stims are used repeatedly without natural sleep in between, the user suffers a cumulative additional point of damage every time (so, on the second use, two points of damage are sustained, on the third, three points and so on).

Item	TL	Effect	Kg	Cost
Stims	8	Removes fatigue, but cause damage	—	Cr50



TRUTH SERUM

Truth serum is designed to force the recipient to answer questions truthfully. It must be tailored to the species being questioned and carries some risks. One dose usually forces the subject to pass a Difficult (10+) END check or be unable to lie for 1D minutes. At the end of this period, the subject suffers 2D damage and becomes unconscious for an hour. Truth serum tends to make the subject vague and confused, so answer may be nonsensical even if they are not deliberately lying. Obtaining useful information from a subject usually requires the Persuade skill, with the truth serum granting DM+2.

Item	TL	Effect	Kg	Cost
Truth Serum	5	Makes lies Difficult for 1D minutes	—	Cr500

ZERO-G TOLERANCE DRUG

This drug is available in patch or pill form, providing 24-hour tolerance to zero-G environments. The drug will alleviate most side-effects of space adaption syndrome in zero gravity and halve the acclimation time required in both low and zero gravity environments. Taking multiple simultaneous doses of this drug provides no additional benefit and will undo any beneficial effect if the user fails a Routine (6+) END check.

Item	TL	Effect	Kg	Cost
Zero-G Tolerance Drug	9	Negates effect of low G, speeds acclimation	—	Cr20

ADDICTION AND WITHDRAWAL

At the Referee’s discretion, the use of various drugs may cause addiction and lead to dependence, cravings and withdrawal. Besides recreational drugs, likely candidates for addiction include combat drug, meta-performance enhancer, metabolic accelerator, nervous response dampener and stims. Even PSI drugs might be addictive if that is an aspect the Referee wants to explore. These rules are suggested guidelines for the Referee to consider if the negative aspects of drug use are to be part of a campaign.

Addiction has two main effects: cravings and withdrawal. Tolerance – the need to take more drugs to achieve the same effect – can also factor in chronic use, although that will require additional recordkeeping. Actual addiction rarely occurs after first use and some habitual users of a drug might avoid addiction altogether but to simulate addiction, the Referee can require an END check to avoid it after a certain number of doses or after a certain number within a constrained time period.

Withdrawal is a physical reaction to the absence of the drug to which the Traveller is addicted. This can be a debilitating condition, even fatal in some instances. After a period without any access to the drug, the addicted Traveller in withdrawal must begin making increasingly difficult END checks, with negative Effects causing temporary reduction to END and/or other characteristics. The number and severity of checks required for withdrawal to complete and the time interval between checks is left to the discretion of the Referee but should be consistent for the withdrawal effect for a particular drug, at least across a particular species.

Cravings often occur after withdrawal but more often begin long before withdrawal becomes an issue. Cravings are controlled by continued use of the drug. Failure to acquire an adequate supply will tend to result in increasingly erratic behaviour. The optional Fatigue rules presented in the *Naval Campaign Sourcebook* (page 58) and the *Deepnight Revelation Referee Handbook* (page 41) can be impacted by this craving, with increasingly negative DMs to avoid Fatigue as time passes. Or the Referee may simply require DM-1 for all checks for every day or week the Traveller goes without the drug. Cravings will cease when the drug is taken again, resetting the clock for both cravings and withdrawal. Cravings will usually, but not necessarily, subside after a longer period of time (months, possibly years) after the last dose was taken.

SURVIVAL GEAR

Travellers demand a range of equipment to help them cope with extreme environments and remind them of the comforts of home, even in the depths of the wilderness. These labour-saving and life-saving devices are found in the ship's lockers and holds of many exploratory ships.

Some items are nearly universally useful but the necessities required for survival vary greatly on environment and terrain, and so the equipment listed in this chapter is divided into easy-to-reference sections that allow you to find exactly the gear you need for your latest expedition into the wilderness.

AERIAL ENVIRONMENTS

Most Travellers lack the ability to fly or avoid damage from falling a great distance. These items provide methods to overcome these limitations.

GRAV BELT

A harness worn across the body, the grav belt is equipped with artificial gravity modules, allowing the wearer to fly. The internal battery will operate for a maximum of four hours before recharging. At TL15, the battery can operate for 12 hours before recharging. The grav belt allows the wearer to fly at up to Medium speed.

Endurance is based on both the mass and speed of the object lifted. Maximum velocity is 200 kilometres per hour, but duration assumes a cruising velocity of 100 kilometres per hour. Exceeding cruising speed reduces effective endurance by 2/3 – every minute over 100 kilometres per hour counts as 1.5 minutes endurance. A grav belt cannot lift more than 500 kilograms total mass, including the mass of the wearer and any other items carried; if carrying more than 250 kilograms, endurance is halved.

Grav Belt	TL	Effect	Kg	Cost
Basic	12	Grav belt (Medium speed), 4 hours	6	Cr100000
Improved	15	Grav belt (Medium speed), 12 hours	6	Cr100000

GRAV PARACHUTE

A personal harness incorporating a smaller version of the grav belt, the chute can be manually controlled or set to activate at a given altitude. Instead of relying upon atmospheric resistance, a grav chute uses a localised contragrav field to slow the Traveller's descent. It does not allow much more lateral movement than a standard parachute but functions even on worlds with no atmosphere. It can be cut in and out or used for slight braking rather than the all-or-nothing descent available with a conventional chute. The internal batteries are good for one descent between recharges. A grav parachute cannot be used to give 'lift' for upward movement but will slow a fall regardless of a user's orientation. Internal safety devices will ensure the user makes a soft landing, often at very low speed, even if unconscious.

Item	TL	Effect	Kg	Cost
Grav Parachute	10	Grav descent control and arrest	4	Cr2000

PARACHUTE

A basic parachute kit including harness and reserve chute. Parachutes only function in Thin or denser Atmospheres (4+). A larger chute at twice the mass and cost is available for Very Thin atmospheres (2–3). Parachutes in Trace atmospheres do not adequately slow a user.

Item	TL	Effect	Kg	Cost
Parachute	4	Soft landing in Atmosphere 4+	3	Cr250
Parachute (Very Thin)	5	Functions in Atmosphere 2–3	6	Cr500

PARAWING

An advanced parachute that allows more control over where the user lands. The parawing kit includes a reserve chute and harness.

Item	TL	Effect	Kg	Cost
Parawing	7	Soft landing in Atmosphere 4+	8	Cr400
Parawing (Very Thin)	7	Functions in Atmosphere 2–3	16	Cr800

SQUIRREL SUIT

A nylon suit that gives the wearer an artificial version of patagia (flaps that allow gliding and limited 'flight'), the squirrel suit slows down falling descent by half and can be used with Athletics (dexterity) to fly horizontally while gliding to the ground. A squirrel suit should be paired with a parachute or parawing for emergencies and final descent, or the user will suffer half falling damage on landing. Squirrel suits require at least a Thin atmosphere to function safely. Glide ratios (the horizontal distance covered while falling) vary from 4:1 for Dense atmospheres, 3:1 for Standard, to 2:1 for Thin. Squirrel suits are not available for Very Thin atmospheres

Item	TL	Effect	Kg	Cost
Squirrel Suit	7	Semi-controlled descent in Atmosphere 4+	1	Cr500

ATMOSPHERIC PROTECTION

Even worlds with nitrogen-oxygen atmospheres may not be suitable for Travellers to breathe unprotected. Whether from various taints, poisons or differing pressures, these items will enable a user to survive.

BREATHER MASK

A combination of both filter mask and respirator, which allows breathing of Very Thin and/or Tainted (2, 3, 4, 7, 9) Atmospheres. The TL10 version is small enough to fit into the nose or can even be a lung implant.

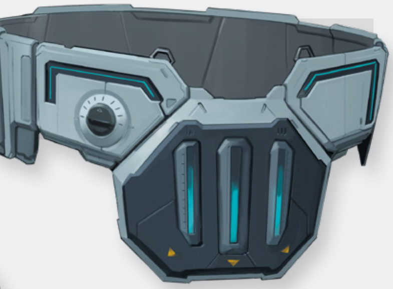
Breather Mask	TL	Effect	Kg	Cost
Basic	5	Combination filter and respirator	—	Cr150
Improved	10	Nose plug or lung implant	—	Cr2000

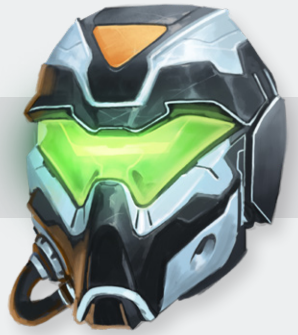
ENVIRONMENT MASK

An environment mask functions in the same way as the breather mask but is also designed to fit seamlessly with NBC or environment suiting, creating a sealed environment for the user and thus protecting against chemical and biological threats. The environment mask is designed to allow communications devices to be used and includes drinking apparatus (a flexible straw). An environment mask will not function in vacuum or underwater.

Item	TL	Effect	Kg	Cost
Environment Mask	5	Combination mask designed for suit use	—	Cr200

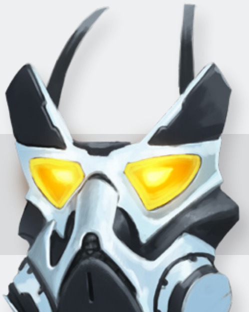
Grav Belt



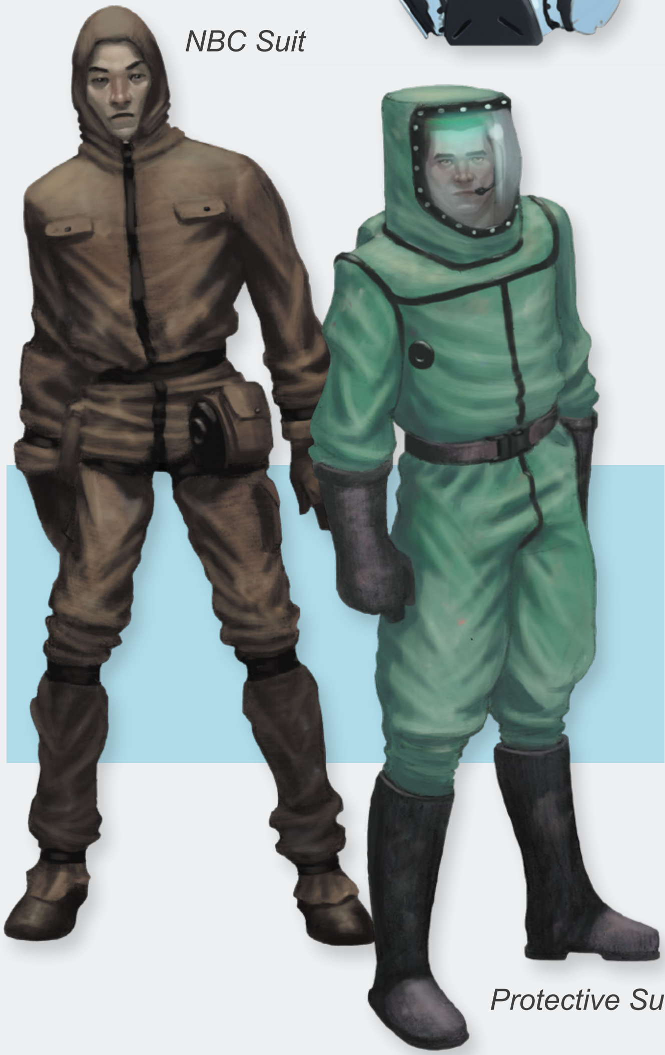


Breather Mask

Filter Mask



NBC Suit



Protective Suit

FACE MASK

A basic face mask and goggles used by aviators and riders of open vehicles. Protects against windblown dust and similar hazards.

Item	TL	Effect	Kg	Cost
Face Mask	4	Eye and face protection from dust, etc.	—	Cr20

FILTER MASK

A filter set that allows an individual to breathe Tainted (4, 7, 9) Atmospheres and also protects against the inhalation of heavy smoke or dust. More advanced respirators are small enough to fit into the nose or can even be a lung implant.

Filter Mask	TL	Effect	Kg	Cost
Basic	3	Protection against Tainted (4, 7, 9) Atmospheres	—	Cr10
Improved	10	Nose plug or lung implant	—	Cr1000

LIFE-SUPPORT MASK

The life-support, or 'space' mask, is functionally similar to the environment mask but can be used in a vacuum or underwater down to a depth of five metres. It gives a full seal with NBC or other emergency suit such as a body sleeve. The mask has integral filters but is normally connected by a hose to a belt-mounted filter/blower unit or a one-hour air tank. Using the belt filter makes breathing easier and reduces fatigue. The air tank is necessary for vacuum or underwater use but can be replaced by larger tanks, artificial gills or a rebreather, reducing life support mask mass to a negligible amount. A filter unit and single air tank are included in the mask price. Additional units cost Cr500 each.

Item	TL	Effect	Kg	Cost
Life Support Mask	7	Environment mask + vacuum and underwater, 1 hour air supply	2	Cr1000

Face Mask

NBC SUIT

An advanced protective suit composed of 'breathable' fabric preventing heat build-up while protecting the wearer from airborne contaminants, biological or chemical weapons, and radioactive fallout. It offers no protection from direct radiation or vacuum and requires an environment or life support mask to be effective. NBC suiting is designed to be easy to decontaminate and is only slightly more cumbersome than the normal field uniform worn by soldiers.

Item	TL	Effect	Kg	Cost
NBC Suit	8	Protection against airborne contaminants, bio or chem weapons, and radioactive fallout	2	Cr250

OXYGEN/AIR TANKS

A twin set of compressed oxygen tanks, allowing independent breathing in smoke, dust, gas or Exotic atmospheres. Two tanks last six hours. These tanks are not suitable for underwater use, see underwater air tanks (Page 114) instead. A refill of proper atmospheric mixture for any given species costs Cr20.

Item	TL	Effect	Kg	Cost
Oxygen/Air Tanks	5	Two tanks providing 6 hours of air supply	12	Cr500

PROTECTIVE SUIT

A sealed, air-conditioned environment suit designed to allow the user to survive in Corrosive atmospheres. The suit's internal air supply is good for six hours. The heavy version also protects against Insidious atmospheres. This is not a vacc suit. It will protect against low pressure (Very Thin atmospheres) but will fail after a short time in Trace atmosphere or vacuum conditions due to internal pressure. After six hours use in Corrosive or Insidious atmospheres, the suit will require reconditioning at 10% cost or risk failure every hour on a 2D roll of 2 with a negative DM of one for every hour beyond six since last reconditioning.

Item	TL	Effect	Kg	Cost
Protective Suit	6	Protects against Atmospheres 2-B for 6 hours	6	Cr1000
Heavy Protective Suit	7	Protects against Atmospheres 2-C for 6 hours	5	Cr1400

RADIATION SUIT

An NBC suit will protect the Traveller against contamination from irradiated particles such as dust but offers little or no protection against direct radiation such as solar flares or a reactor breach. A vacc suit will offer some protection but for areas of hard radiation a dedicated radiation suit is required, reducing exposure by 100 rads. Radiation suits become more protective at higher Tech Levels, adding 10 rads of protection for each TL above 6.

Radiation suits do not protect against vacuum or underwater environments but include the capabilities of an environment suit (see page 29) and can accommodate life support masks, oxygen tanks and rebreathers.

Item	TL	Effect	Kg	Cost
Radiation Suit	6	Protects against 100 rads (+10 per TL above 6)	10	Cr5000

REBREATHER

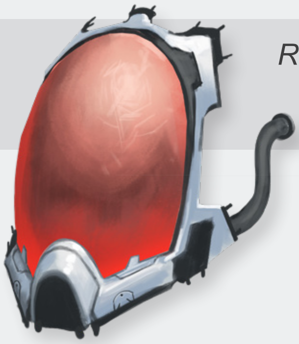
The rebreather is a bulky backpack containing breathable atmospheric tanks and face mask that collect exhaled gases and 'scrub' them into breathable air. A rebreather provides six hours of breathable atmosphere and can be used in any environment that is not otherwise harmful, such as being underwater. At each TL above 6, the rebreather can sustain life for another hour. If a user remains motionless or practices minimal exertion, the rebreather may be able to sustain life up to twice its rated duration.

Item	TL	Effect	Kg	Cost
Rebreather	6	Mask/backpack providing 6 (or TL) hours air	10	Cr250

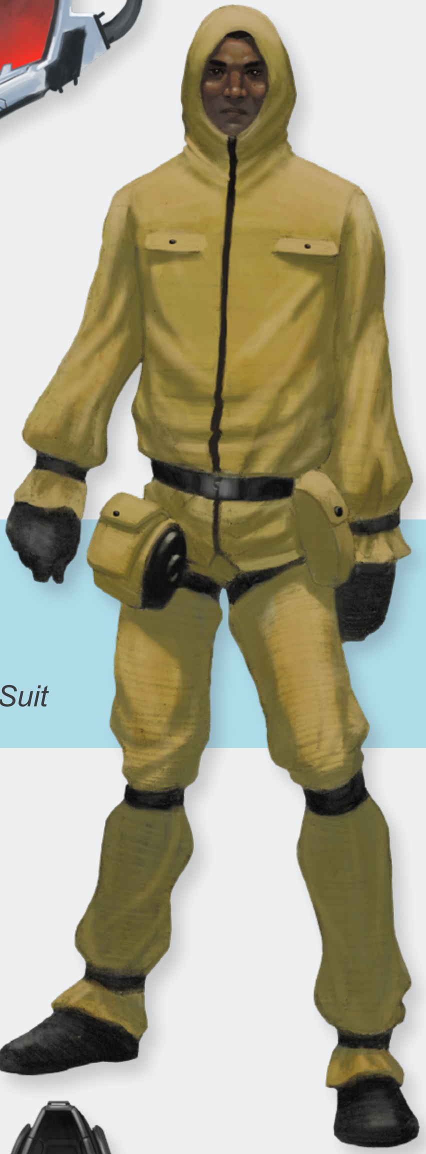
RESPIRATOR

This mask concentrates inhaled oxygen, allowing a user to breathe in worlds with Very Thin (3) Atmospheres. Respirators take the form of a face mask or mouthpiece initially. More advanced respirators are small enough to fit into the nose or can even be a lung implant.

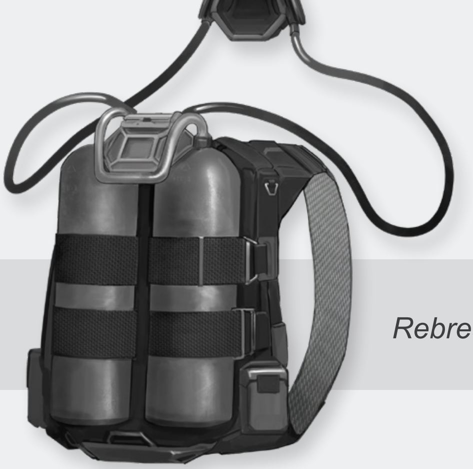
Respirator	TL	Effect	Kg	Cost
Basic	5	Protection against Very Thin (3) atmospheres	—	Cr100
Improved	10	Nose plug or lung implant	—	Cr1000



Respirator



Radiation Suit



Rebreather

ARCTIC AND COLD ENVIRONMENTS

Travellers, at least humans, cannot survive long in cold environments. As noted on page 82 in the *Traveller Core Rulebook,* lack of protection in the cold will eventually cause damage to unprotected Travellers.

COLD WEATHER CLOTHING

A set of heavy outer garments designed to protect the wearer from extremely cold temperatures. Natural materials are used at lower Tech Levels. Higher-tech clothing is less bulky and protects the wearer better. The clothing reduces the damage from arctic conditions to 1D every four hours (see page 82 of the *Traveller Core Rulebook*) and the time between damage rolls increases by two hours per TL above 0. The clothing is quite clumsy at low Tech Levels, inflicting a DEX-1 penalty but usability improves as it advances.

Cold Weather Clothing	TL	Effect	Kg	Cost
Basic	0	Protection from cold (1D per 4 hours)	4	Cr200
Improved	1+	2 hours protection per TL above 0	4	Cr200
Advanced	5	No DEX penalty	2	Cr500

HEATSUIT

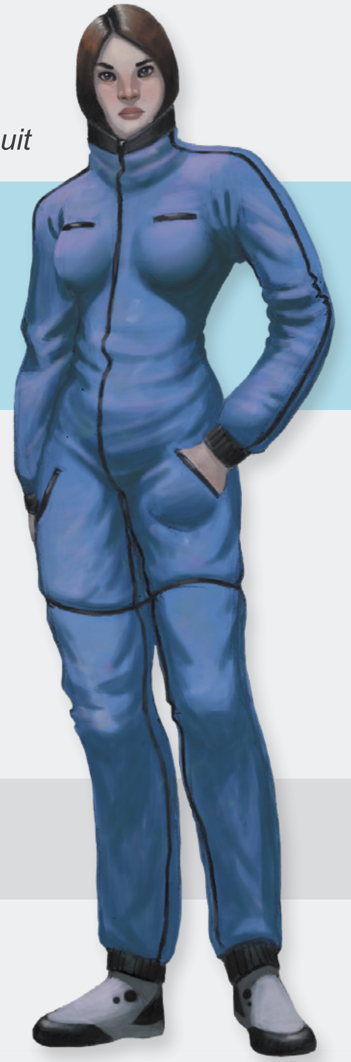
A coverall-like garment incorporating battery-powered heater coils. The heatsuit eliminates the ill effects of temperatures down to -60ºC. It is not damaged by immersion in water but will not function while the wearer is immersed. The battery lasts 12 hours and can be recharged or replaced. The suit can also be directly powered from the output socket of a small power source.

Item	TL	Effect	Kg	Cost
Heatsuit	8	Protection against cold to -60°C for 12 hours	2	Cr350

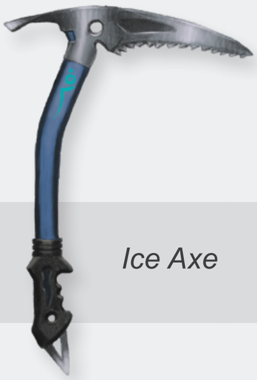
ICE AXE

A small axe optimised for digging into ice when climbing. It adds DM+2 to any check involving climbing or arresting a fall on ice. Treat as a hatchet (see page 134) in combat.

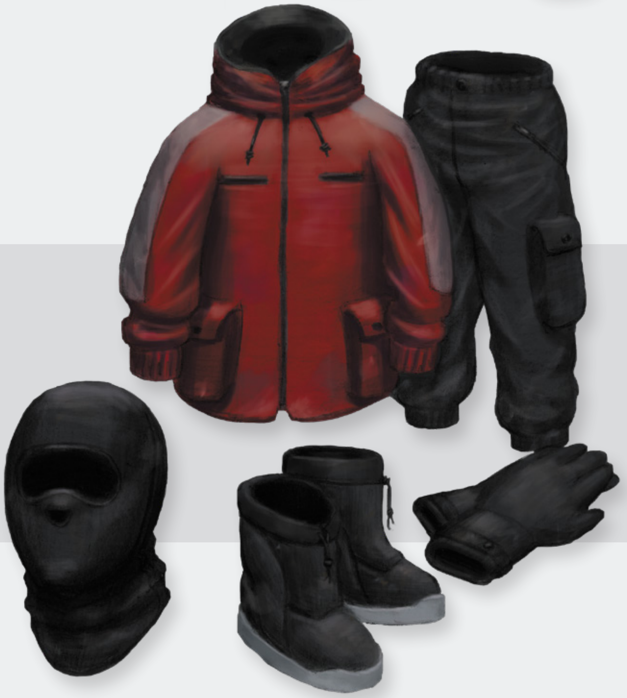
Item	TL	Effect	Kg	Cost
Ice Axe	3	DM+2 to task checks on ice	2	Cr50



Heatsuit



Ice Axe



Cold Weather Clothing

ICE TERRAIN KIT

A set of accessories making crossing ice or climbing icy surfaces less hazardous. Includes crampons for boots, snowshoes, rope and a brightly-coloured rescue blanket. The kit removes any negative DM for checks performed on ice or snow. The ice terrain kit does not include clothing.

Item	TL	Effect	Kg	Cost
Ice Terrain Kit	1	Removes negative DMs caused by ice or snow	4	Cr50

SKIS

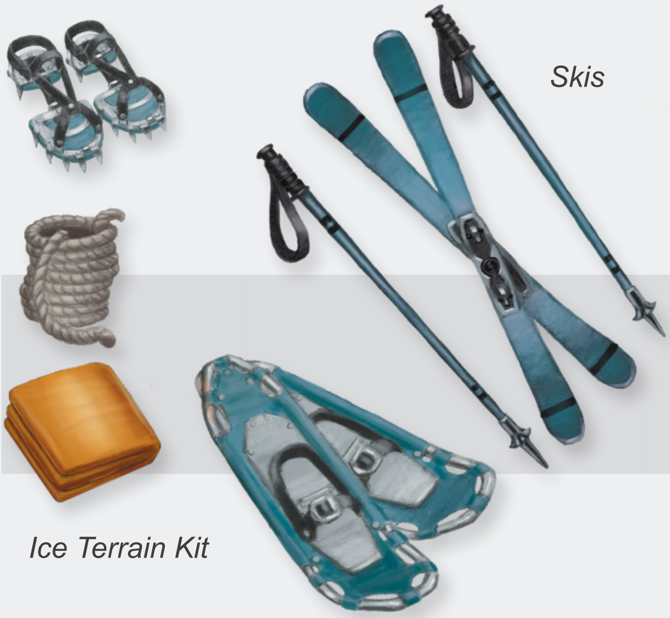
A set of skis and poles. Skis make travel over snow much faster and less fatiguing, eliminating any speed penalties if on level ground and more than doubling speed when moving downhill.

Item	TL	Effect	Kg	Cost
Skis	1	No snow speed penalties, x2.5 speed downhill	1	Cr75

SNOWSHOES

A pair of wide shoes designed to spread the wearer's weight and make walking on soft surfaces like snow or volcanic dust safer, reducing any penalties to movement in these conditions by half.

Item	TL	Effect	Kg	Cost
Snowshoes	0	Halves movement penalties on snow or dust	1	Cr30



Skis

Ice Terrain Kit

DESERT AND ARID ENVIRONMENTS

Travellers, at least humans, cannot thrive in hot or arid environments. They need protection from the heat and some source of water. As noted on page 82 in the *Traveller Core Rulebook,* lack of protection in the heat will eventually cause damage to unprotected Travellers.

ADVANCED DESERT SUIT

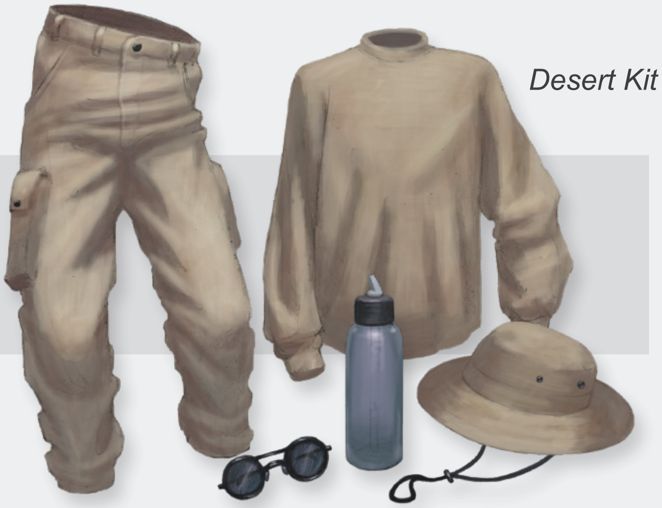
An all-in-one suit designed to minimise moisture loss by trapping sweat between the porous inner layer and impermeable outer one. The suit is reflectorised to reduce the heating effect of the sun (although a dulled or camouflage option is also available). It includes a hood, face mask and goggles. The suit reduces damage from very hot desert conditions (50°C) to 1D every four hours (see page 82 of the *Traveller Core Rulebook*) and allows short-term survival in temperatures up to 65°C, at 1D per hour damage effects. For every Tech Level above 9, the suit will increase the interval between damage rolls by two hours and increase the maximum temperature for short-term survival by 5°.

Item	TL	Effect	Kg	Cost
Advanced Desert Suit	9	Protection from desert conditions (1D per 4 hours)	2	Cr1000

DESERT KIT

A basic desert outfit including loose-fitting trousers and shirt, a wide-brimmed hat, sunglasses, large water bottle (2 litres) and mineral tablets. It increases the interval for 1D damage from heat up to 50°C to every two hours.

Item	TL	Effect	Kg	Cost
Desert Kit	5	Protection from desert conditions (1D per 2 hours)	1	Cr75



Desert Kit

GOGGLES/SHADES

Sunglasses or full goggles designed to protect the eyes from bright light. At TL7, reactive lenses are available allowing the wearer to keep their shades on while moving from dark to light conditions. At TL9, they include automatic protection against very bright light such as lasers, flares or nuclear detonations. The shades remain dark for a full minute after protecting the wearer in this way and must be removed to regain sight.

Goggles/ Shades	TL	Effect	Kg	Cost
Basic	5	Protection from glare and bright light	—	Cr20
Improved	7	+Reactive lenses	—	Cr20
Advanced	9	+Protection from lasers, flares, nuclear flashes	—	Cr200

HEATPROOF SUIT

A reflective and insulating suit and helmet, the heatproof suit protects the wearer from all but the most extreme temperature conditions. The suit is rather clumsy and all DEX-based checks suffer DM-2. It may be treated as a fireproof suit (see page 18) against flame weapons and as ablat armour (see page 19) against lasers. The suit will fully protect a wearer from very hot desert conditions and limit damage from temperatures up to 200°C to 1D per hour and up to 500°C to 1D per minute (see page 82 of the *Traveller Core Rulebook*).

Item	TL	Effect	Kg	Cost
Heatproof Suit	8	Acts as fireproof suit and ablat armour, protection from extreme heat (1 per hour to 200°C, 1 per minute to 500°C	6	Cr100

HYDRO-COLLECTOR

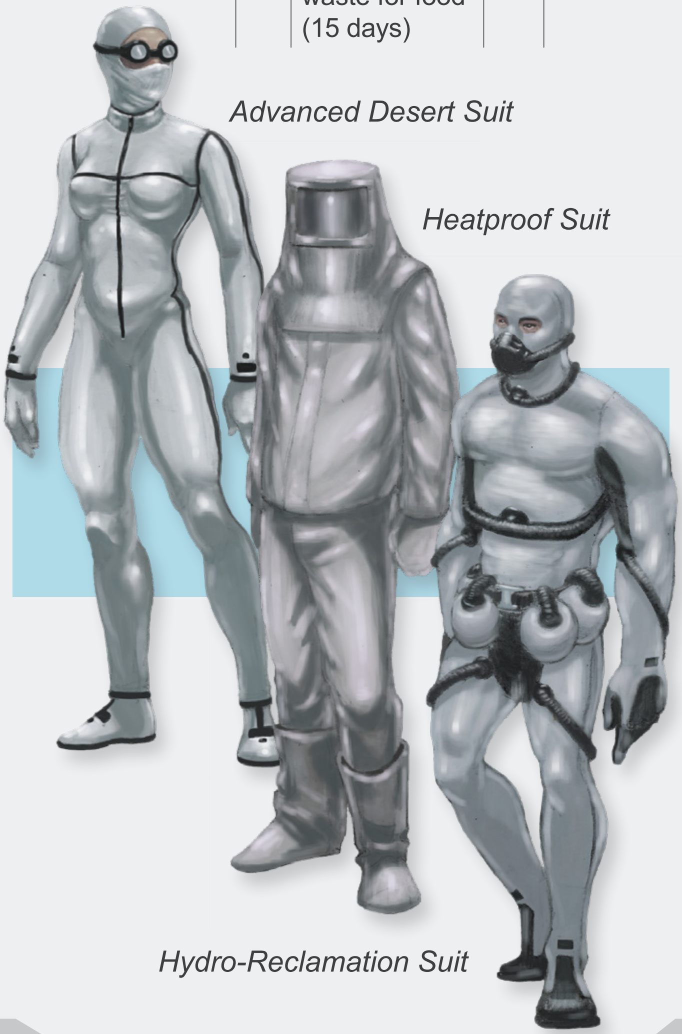
An oval-shaped bowl sitting atop a wide-footed tripod nearly a metre tall when extended, the hydro-collector uses tiny electromagnetic pulses to draw moisture out of the air and collect it as drinkable water. One eight-hour collection session will provide an amount of drinking water depending on the average local atmospheric humidity. In arid areas this will produce three litres or enough water for one person-day. In temperate areas, nine litres. In moist or humid areas, 15 litres. The device is solar powered and recharges while it is collecting, in most cases.

Item	TL	Effect	Kg	Cost
Hydro-collector	11	Collects drinking water from the atmosphere	8	Cr1000

HYDRO-RECLAMATION SUIT

This complete coverage bodysuit is designed to recycle all of a body's fluids and wastes back into usable materials in order to survive much longer in a desert or other arid environment. Like its predecessors, the suit is reflectorised to reduce the heating effect of the sun, acting as a TL11 or greater advanced desert suit. It covers the entire body, enclosing all orifices and inserting several 'replenishment' tubes. Wearing an empty suit can effectively allow the Traveller to go up to 30 days without needing water and 15 days without food before needing to have its internal scrubbers and injectors cleaned.

Item	TL	Effect	Kg	Cost
Hydro-Reclamation Suit	11	Advanced desert suit + reclaims water (30 days) and waste for food (15 days)	6	Cr10000



SOLAR VAPORATOR

A device using solar panels to generate power during the day (and storing it in an internal battery) and collecting moisture from the air, especially at night. It yields two litres of water per 24 hours in Standard or Dense atmospheres, one litre in Thin atmospheres, and half a litre in Very Thin atmospheres. The vaporator is stored in a compact (50 x 20 x 20 centimetres) package and is unfolded for use. It can be considered an extra-small solar panel array (see page 119).

Item	TL	Effect	Kg	Cost
Solar Vaporator	10	Collects drinking water from the atmosphere	5	Cr1250

GENERAL SURVIVAL GEAR

These items are applicable in many environments and include meals, water and the means to carry such sustenance. A human Traveller in the field will require at least three litres of water and two units of caloric-dense (often dehydrated) sustenance per day. Heavy exertion, extreme heat or cold and other factors may increase these requirements by a factor of two or more.

BACKPACK

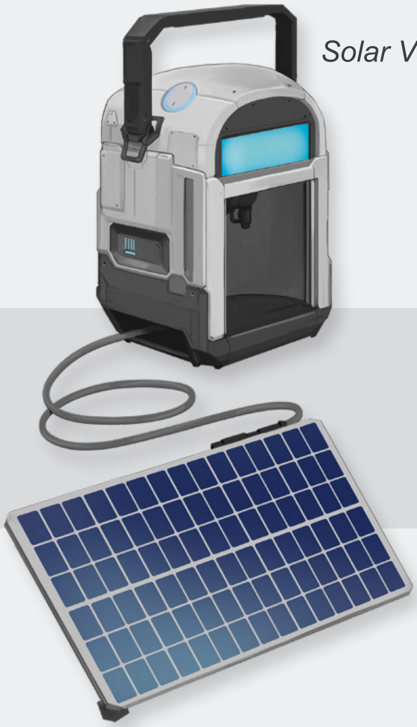
A basic carrying bag with shoulder straps and external pockets. Most backpacks have an internal capacity of 30–60 litres volume and can support double that volume of items with external straps or clips. From TL6, backpacks are more waterproof, enough to keep the contents dry during a brief immersion if properly sealed. A Bivvy pack is available at TL7, which includes a waterproof blanket and hood that fold out of the lining, allowing the emptied pack to be used as a sleeping bag or ready-made bivouac.

Item	TL	Effect	Kg	Cost
Backpack	3	Basic carry pack	3	Cr45
Waterproof Backpack	6	Some protection of contents from immersion	1	Cr75
Bivvy Pack	7	+Conversion into sleeping bag or bivouac	1	Cr150

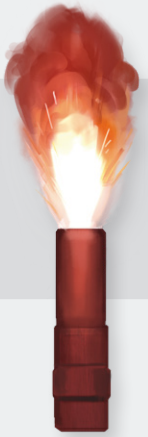
CANTEEN

A belt-mounted metal or plastic container for 1.5 litres of water (or other liquids) Some versions include a detachable mess-kit as well.

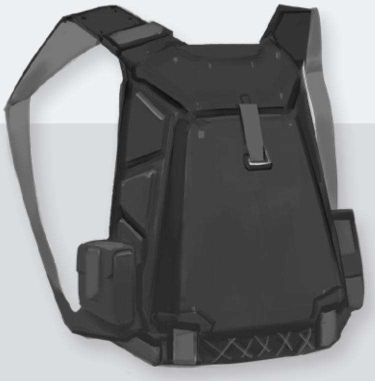
Item	TL	Effect	Kg	Cost
Canteen	3	Holds 1.5 litres of liquid	0.5	Cr10



Solar Vaporator



Distress Flare

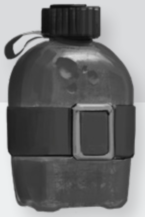


Backpack

Duct Tape

Chemical Light Stick

Fire Extinguisher



Canteen

CHEMICAL LIGHTSTICK

A 10 centimetre rod of clear plastic containing chemicals which, when mixed by twisting the stick, give off a soft glow. Lightsticks last for about 24 hours and are bright enough to read by or to navigate a cave.

Item	TL	Effect	Kg	Cost
Chemical Lightstick	6	Single-use 24 hour light	—	Cr1

DISTRESS FLARE

A free-standing incendiary flare giving off a bright light and large amounts of coloured smoke. The distress flare is designed to float upright in water and triggered by a lanyard. It is very difficult to extinguish once lit, lasting for five minutes. It will continue to burn underwater or in atmospheres without oxygen.

Item	TL	Effect	Kg	Cost
Distress Flare	6	5 minute emergency flare	0.25	Cr15

DUCT TAPE

A strong, fabric-based, multi-purpose adhesive tape. One roll contains a 5 centimetre x 30 metre length of tape. Useful for hasty repair work as well as for restraining and gagging prisoners, among many other things.

Item	TL	Effect	Kg	Cost
Duct Tape	6	Multi-purpose adhesive tape	0.5	Cr5

FIELD KIT

A basic field operations and survival kit containing a bush hat, pants, shirt and a warm jerkin, a waterproof poncho/blanket, water bottle, belt pack with fire-starting equipment, one day's worth of (almost edible) iron rations and a machete (treat as a blade). Boots must be purchased separately. Above TL6, the kit also includes half a dozen chemical lightsticks.

Item	TL	Effect	Kg	Cost
Field Kit	3+	Basic field kit and clothing with 1 day's rations	5	Cr100

FIRE EXTINGUISHER

A simple handheld firefighting device. More advanced units can be tailored to specific fire types. If used to put out a victim who has been subject to a flame attack, the extinguisher will reduce damage by half during the first combat round it is used before eliminating all damage in subsequent rounds.

Item	TL	Effect	Kg	Cost
Fire Extinguisher	5	Single use handheld fire extinguisher	2	Cr50

FLARE

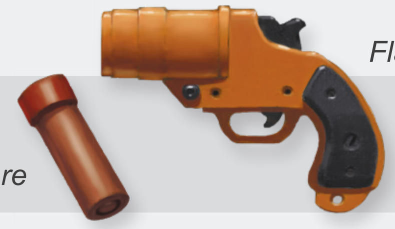
Used in conjunction with a flare launcher, individual flares can be used for a variety of purposes. Illuminating flares cast harsh, bright light for one minute before falling to the ground in Standard or Dense atmospheres or half a minute in Thin atmospheres. Signalling flares are designed to be highly visible but otherwise cast little light. Whistling flares are similar but also emit a piercing whistle after it has been fired and is drifting back to the ground. This sound is not terribly pleasant but it can be heard for 3D kilometres in every direction.

Item	TL	Effect	Kg	Cost
Illuminating Flare	5	Launched flare casting bright light	—	Cr25
Signalling Flare	5	Launched flare casting signal light only	—	Cr5
Whistling Flare	5	Launched flare emitting whistle	—	Cr10

FLARE LAUNCHER

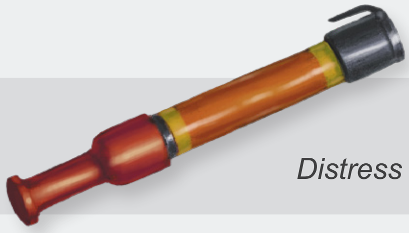
A simple pistol or tube type launcher for use with flares. Used as a weapon, a flare gun is highly inaccurate, with an effective range of 5 metres, imposing DM-2 on all attack rolls and inflicting only 1D damage with illumination or signalling flares, although it may set flammable objects on fire. A whistling flare will inflict only one point of damage to a target.

Item	TL	Effect	Kg	Cost
Flare Launcher	5	Smoothbore pistol or tube launcher for flares	—	Cr75



Flare Launcher

Flare



Distress Flare

FOLDING CAGE

A collapsible folding cage used to contain captured animals, constructed from lightweight and durable crystaliron composites. It is easy to transport but must be wrapped in a tarp or other material to prevent clanking or rattling. A folding cage will contain an animal of up to 24 Hits.

Item	TL	Effect	Kg	Cost
Folding Cage	12	Collapsible cage for animals up to 24 Hits	6	Cr1200

G-SUIT

A G-suit, or more accurately, an anti-G suit is designed to help pilots function during high-G manoeuvres without losing consciousness by preventing the pooling of blood in their legs. A G-suit will not assist movement in a high-G environment but will reduce the total load on a wearer by 1G for any task checks required to maintain consciousness during uncompensated high-G operations; this bonus stacks with any G-tolerance drugs (see page 93) consumed. A liquid-filled version provides better compression and adds another G to the wearer's tolerance.

Item	TL	Effect	Kg	Cost
G-Suit	6	Negates effect of +1G while seated	3	Cr1000
G-Suit (liquid-filled)	8	Negates effect of +2G while seated	6	Cr3000

GAS/OIL LAMP

A lamp lasts about six hours on a half-litre of oil or gas and will illuminate a five metre radius to the equivalent of normal daylight. The fuel poses a fire hazard if spilled. Fuel refills cost Cr1.

Item	TL	Effect	Kg	Cost
Gas/Oil Lamp	2	Daylight-equivalent illumination for 6 hours	1	Cr10

GRAV HARNESS

A grav harness is an anti-grav device whose strength is between a grav belt and grav parachute. Its purpose is to aid mobility on high-G worlds and/or allow its wearer to carry a heavier load without encumbrance on normal gravity worlds. When worn, the grav harness negates up to 1G, but will not allow the wearer to leave the ground on worlds with gravity lower than 1G – although it will make them lighter. The grav harness functions as a grav parachute (see page 97) if necessary. It does not assist with acclimation on higher G worlds and the wearer is still subject to any acclimation penalties but suffers no gravity-related fatigue effects.

On worlds with less gravity than 2G, it can also allow the wearer to carry a heavy load without encumbrance. The harness will negate a load of 100 kilograms at 1G, with its capability changing linearly to near 200 kilograms at near zero-G and to zero at 2G. The wearer should also consider bulk and balance when carrying heavy loads, possibly resulting in some encumbrance penalty despite the harness.

A grav harness holds four rechargeable batteries, each good for two hours at TL12 and four hours at TL15. When not using the full power of the harness, for example when operating in less than 2G environments or when carry a lighter load, battery life will increase accordingly. Additional batteries can be carried and should be replaced before the last battery runs down; these batteries mass one kilogram each and count towards the total encumbrance. A harness (and installed batteries) has no effective mass when powered and six kilograms mass when powered off.

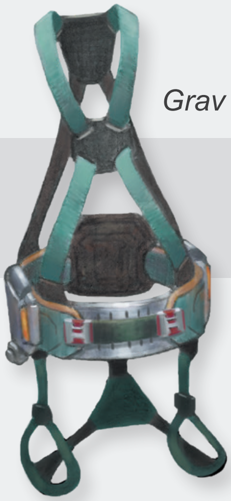
Item	TL	Effect	Kg	Cost
Grav Harness	12	Negates 1G or 100 kg encumbrance	—	Cr50000
Grav Harness Battery	12	Powers gravity harness for 2 hours	1	Cr500
Grav Harness Battery	15	Powers gravity harness for 4 hours	1	Cr1000

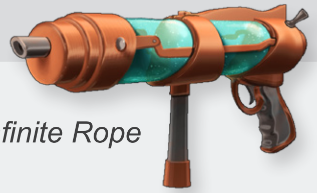
INERTIAL LOCATOR

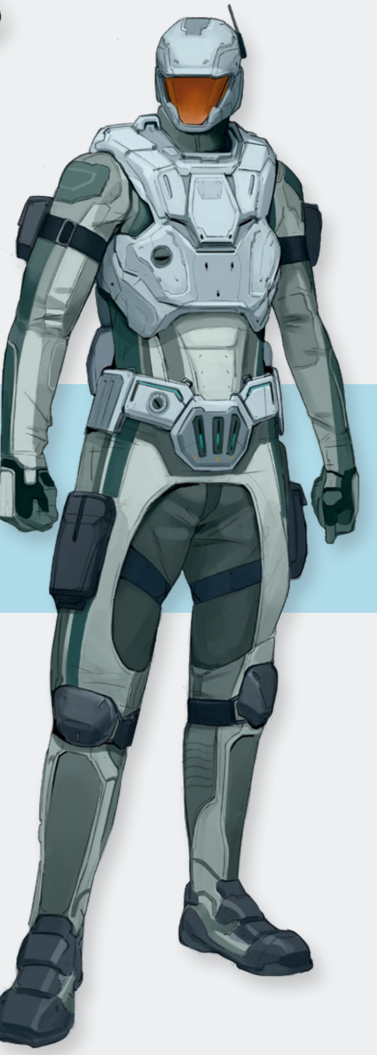
Indicates the direction and distance travelled from a starting location. The inertial locator is useful on worlds without a magnetic field or a satellite positioning network and is more precise than a compass or GPS locator. The locator will accept data from a wireless source to create a location map but accuracy is limited to the source material. An inertial locator chip can be added to a portable computer or mobile comm.

Item	TL	Effect	Kg	Cost
Inertial Locator	9	Tracks movement from a starting point	—	Cr1200

Folding cage


Grav Harness


Infinite Rope


G-Suit

INFINITE ROPE

Stored in liquid form within a device looking like a caulk gun, infinite rope is a bacterium binding to itself with amazing strength and flexibility. When needed, the trigger on the 'gun' is pulled and a length of rope will be produced, instantly toughening. The dispenser has a shutter that allows for the rope to then be cut and used as normal. When finished, however, the rope can be balled up and reloaded into the gun to be digested by the bacterium colony and re-used later. A single infinite rope dispenser can produce up to 26 metres of rope before running out and must have at least one metre's worth of colony left inside to reclaim old rope (a readout indicates how much of the colony remains in the gun). The rope is extremely strong, carrying up to 750 kilograms without showing stress or tearing.

Item	TL	Effect	Kg	Cost
Infinite Rope	16	Gun with reusable (to 25m) rope, 750kg load	1	Cr1000

HIKING BOOTS

A set of sturdy boots protecting the wearer's feet and ankles from rough ground, thorns and other minor hazards. Higher-tech boots are lighter and more comfortable.

Hiking Boots	TL	Effect	Kg	Cost
Basic	1	Protection +1 to feet and ankles	2	Cr50
Improved	6	Protection +1 to feet and ankles	1	Cr50
Advanced	8	Protection +2 to feet and ankles	—	Cr200

MAGNETIC COMPASS

Indicates direction of magnetic north on worlds with a strong global magnetic field.

Item	TL	Effect	Kg	Cost
Magnetic Compass	3	Indicates direction of magnetic field	—	Cr10

POCKET SAW

A slim but sharp collapsible saw or saw-like chain which can be folded into a 12 centimetre long box or a pocket.

Item	TL	Effect	Kg	Cost
Pocket Saw	6	Collapse lightweight saw	—	Cr25

PURIFICATION TABLETS

These small, chalky white tablets are stored in waxed paper envelopes to keep them from being exposed to airborne humidity. When dropped in a container of water (one tablet per four litres) there is a powerful effervescent reaction. A foam forms and traps all natural impurities before rising to the top of the water to be poured or scraped off. While these tablets will not neutralise poison or radiation, they are essential to eliminate natural bacteria and pollutants. The advanced versions will filter any liquid that is at least 80% water (one tablet needed for every 10 litres) and all radiation, poison, additives or the intoxicating alcohol in a liquid will be instantly nullified and sublimated as pops of bubbles on the surface.

Purification Tablets	TL	Effect	Kg	Cost
Basic (10 pack)	7	Purifies 4 litres/tablet	—	Cr5
Advanced (10 pack)	13	Purifies 10 litres/ tablet and severe contaminants	—	Cr50

RAD BLANKET

This heavy plasticised sheet of lead fibres blocks most radiation that strikes it, saving anyone or thing sheltered beneath. All sources of rads being applied to objects beneath the blanket are reduced by 2D x 10 rads. A rad-blanket folds into a roughly cubic package that is about 50 centimetres in height, width, and depth.

Item	TL	Effect	Kg	Cost
Rad Blanket	9	Protects against 2D x 10 rads	2	Cr150

REFLECTORISED TARPAULIN

A thin and flexible metallic sheet whose shiny surface reduces incoming radiation by reflection, decreasing the exposure of anything underneath it by 40 rads. The standard version measures 5 x 10 metres.

Item	TL	Effect	Kg	Cost
Reflectorised Tarpaulin	7	Protects against 40 rads	1	Cr400

ROPE

This is a 10-metre-long strong but light rope or cable made from natural or artificial fibres, able to hold 150 kilograms before breaking. At TL9, rope is completely synthetic and chemically adjusted to bear much heavier loads, holding up to 250 kilograms before breaking. At TL13, the rope is based on rapidly-restructuring protein coats of viruses, a bio-engineered colony of proteins that is incredibly strong, holding up to 500 kilograms before breaking. Longer ropes are available at a linear increase in cost and mass but ropes longer than 50 metres often include a spool which adds 10% to the mass.

Rope	TL	Effect	Kg	Cost
Basic	5	10 metre rope, 150kg load	5	Cr20
Improved	9	10 metre rope, 250kg load	3	Cr50
Advanced	13	10 metre rope, 500kg load	2	Cr100

SLEEPING BAG

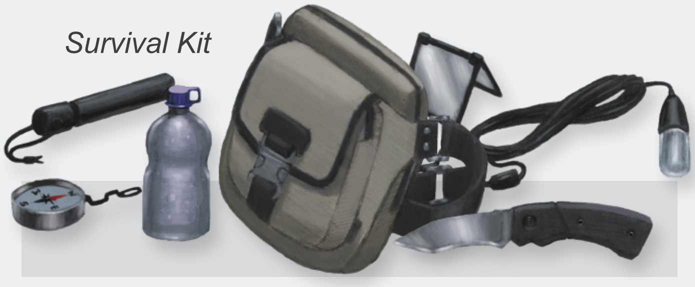
A warm, lightweight and somewhat waterproof personal sleeping bag. Two or more can be fastened together to make a larger enclosure.

Item	TL	Effect	Kg	Cost
Sleeping Bag	5	Sleeping bag, moderate weather protection	1	Cr25

SURVIVAL KIT

A small backpack or belt pack containing personal survival equipment. Contents include: small knife, fire-starting equipment, blanket/poncho, four days of preserved rations, water bottle, compass, light cord/string, mirror, water purification tablets, survival manual. Higher-tech versions include more advanced equipment but basic functionality is the same.

Survival Kit	TL	Effect	Kg	Cost
Basic	5	See above for contents	5	Cr50
Improved	10	Lighter materials and rations	3	Cr100



Survival Kit

SURVIVAL MEAL

A pre-packaged storable meal that comes in a variety of flavours. An adult human requires two a day for long-term survival but high levels of activity such as all-day hiking, swimming or cold conditions may increase the requirement to four or more. These are designed for long-term storage and lack water, requiring hydration to be palatable. The improved version is a variety of ready-to-eat meals in paper or plastic packaging. The advanced version of this meal is a dense synthetic blend of nutrients available as an energy bar or as a tube of pudding power.

Survival Meal	TL	Effect	Kg	Cost
Basic	1	Pre-packed storable meal, 2+ per day required	1	Cr1
Improved	5	Pre-packed storable meal, 2+ per day required	0.5	Cr5
Advanced	10	Pre-packed storable meal, 2+ per day required	0.25	Cr10

SURVIVAL STILL

A survival still, oftentimes referred to as a ‘Glop Maker’, is a compact wilderness nutrition processor designed to turn compatible organic matter into a just-about-edible nutrient product informally known as ‘glop’. The exact composition depends upon what is put into the still and in some cases vital nutrients will be missing.

The still’s readout advises the Traveller as to how nutritional the glop will be but even the highest technology cannot make it taste any better. Most consumers carry syrupy flavours to add to the substance but these will eventually run out. Glop output can be customised as dry jaw-busting bars for portability or as a damp and fairly disgusting porridge for immediate consumption. The still can also be set to produce pure water, with or without a high mineral content.

A survival still unfolds from its compact storage configuration to include a hopper intake for fluids or organic matter, a press for crushing or granulising organic material and a container with a set of durable filters and catalysts which are the ‘guts’ of the still. Output is stored in expandable bags with taps available for water or porridge extraction. The still can be hand crank-operated to press the organic materials into the still or can run from a portable power source.

The basic TL9 unit provides DM+2 to all Survival checks made to find food in the wild. The TL11 version is capable of analysing organic input to create a detailed nutritional guide, allowing a stranded Traveller to create as balanced a meal as possible, indefinitely staving off hunger and malnutrition if enough organic matter and water is available. The TL13 version includes advanced filters to purify materials, removing any radiation, poison or other contaminants, and its Shugilii filters and catalysts can wring nutrition out of otherwise inedible organic material.

Marooned Travellers with a survival still will find their food and water needs are taken care of. However, many cite the food as the single greatest drain on their will to live. Fortunately, the still can also be used to distil alcoholic beverages into spirits for medicinal or recreational use.

Survival Still	TL	Effect	Kg	Cost
Basic	9	DM+2 to all Survival checks to find food	3	Cr1000
Improved	11	Automatic Survival check if input available	2	Cr2500
Advanced	13	+Filters for severe containments, Shugilii filters	2	Cr4500

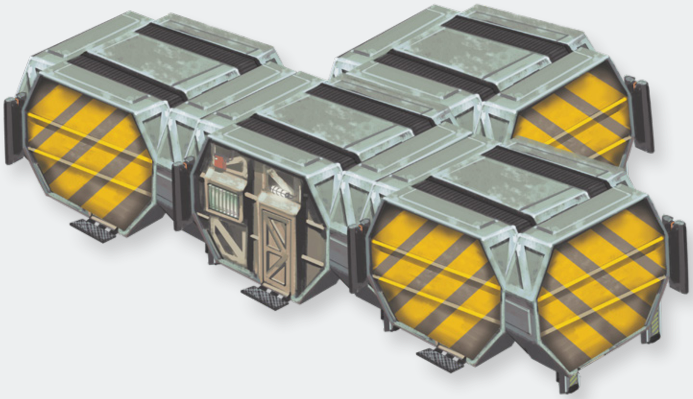
TORCH

A bundle of flammable materials mounted on a handle or stick. A torch will last about one hour and illuminate a six-metre radius, producing a thick, heavy smoke as it does so.

Item	TL	Effect	Kg	Cost
Torch	0	Lights 6-metre radius for 1 hour	—	Cr1

HOUSING OPTIONS

Advanced base and habitat modules, even prefabricated cabins and tents can have additional options installed. Unless stated otherwise the mass and cost of these items is based on a standard module or cabin size of 6 x 4 x 3 metres, which is 72 cubic metres or about five ship displacement tons.



ARMOURED

Survival structures can be layered with the armoured option, granting Protection +5 to those inside from attacks originating outside of the structure (and vice versa). This triples the mass of the structure. This option can be added up to three times with each mass increase based on the housing's initial mass.

Item	TL	Effect	Kg	Cost
Armoured	9	Add Protection +5 to structure	x3	Cr2500

CHAMELEON FIBRES

Chameleon fibres can provide structures for the benefits of advanced camouflage. The TL12 version provides a configurable static camouflage pattern to match the environment and bleeds heat excesses to match the background infrared levels, effectively rendering those inside invisible to IR sensors, providing DM-2 to Recon checks and DM-4 to IR sensor checks. The TL13 version uses both IR and Vislight camouflage technologies, adding light-bending technology and making everyone inside nearly invisible to the naked eye (DM-4 to Recon and sensor checks).

Chameleon Fibres	TL	Effect	Kg	Cost
Basic	12	DM-2 to Recon, DM-4 to IR sensor checks	—	Cr8000
Improved	13	DM-4 to all Recon and sensor checks	—	Cr60000

CLIMATE CONTROLLED

This option allows pre-fabricated cabins, tents and other sealed but otherwise unheated or cooled housing units to be climate controlled to +/- 50°C. It does not protect against all atmospheric Taint factors but will block wind-blown dust and other relatively large particles from entering the structure while its doors and windows remain closed. This temperature control is built into the walls and will preserve or eliminate ambient heat from its inhabitants using heat differential and built-in solar panels and power cells to maintain environmental control.

Item	TL	Effect	Kg	Cost
Climate Controlled	10	Moderate unpowered climate control	—	Cr500

HOLOSIMULACRUM

The epitome of internal structure alterations, the holosimulacrum is a network of thousands of tiny holographic and gravitic emitters that can be commanded (verbally or by remote) to recreate a specific location. The holographic terrain will move and react as if the structure was the proper size, manipulating gravitic fields to fool the minds, eyes and bodies of those inside into believing they are actually interacting with the area.

Item	TL	Effect	Kg	Cost
Holosimulacrum	17	Creates immersive holographic environment	—	MCr5

NULL-SHIELDING

Adding certain psion-dulling chemicals and elements to the outer layers of the structure can effectively block the passage of psionic influence and manipulation. Psions suffer DM-2 whenever trying to project an ability through the walls of the structure. The shielding works both ways, on psions within and without. This modification cannot be used on any building with a psi-amplifier.

Item	TL	Effect	Kg	Cost
Null-Shielding	16	DM-2 to psion task checks in or out	—	Cr18000

PSI-AMPLIFIER

The opposite of null-shielding, this structure modification sews psi-conduit crystal wires through the outer layers of the building, focusing on a central hub. The presence of so many psi-crystals in the area grants DM+2 to all psionic checks while within the structure but any psion touching the central hub with their bare flesh while using a psionic ability gains DM+6 to the check. This modification cannot be used on any building with null-shielding.

Item	TL	Effect	Kg	Cost
Psi-Amplifier	16	DM+2 to Psion checks, +6 if touching the hub	—	Cr75000

RAD SHIELDING

This adds neutralised elements of lead and polymer plastics designed to block radiation to the outer layers of any structure, reflecting most radiation. When a source of radiation tries to cross the shielded layers, it is instantly reduced by 100 rads. The shielding works both ways, reducing rads for outside sources coming in as well as inside sources emanating outward. This option can be applied multiple times to a structure. The first application adds no mass to the overall structure but subsequent applications each add 50% to the mass.

Item	TL	Effect	Kg	Cost
Rad-Shielding	10	Blocks 100 rads	—	Cr2000

SELF-ASSEMBLING

The structure is capable of expanding and assembling itself with minimal aid, reducing the time needed to set up the shelter to a single person-hour.

Item	TL	Effect	Kg	Cost
Self-Assembling	11	Assembles with 1 person-hour effort	—	Cr5000

SELF-SEALING

Structures can be made self-repairing and self-sealing. Small breaches and rips are automatically fixed in seconds, restoring an air-tight barrier.

Item	TL	Effect	Kg	Cost
Self-Sealing	11	Automatically seals breaches within seconds	—	Cr2000

MARINE ENVIRONMENTS

Many worlds have surfaces partially or completely covered in water. To operate beneath the surface of this environment, Travellers that are neither aquatic nor amphibious will need equipment to survive. Diving depths listed in this section assume Standard atmospheric pressure and gravity; deviation from these values will affect diving depth inversely in a linear fashion.

ARTIFICIAL GILL

An artificial gill extracts oxygen from water to allow the user to breathe for an unlimited time while submerged. It functions only on worlds with Thin, Standard or Dense atmospheres. As it extracts oxygen dissolved in water, an artificial gill will not work in anoxic water conditions. Artificial gills require the use of a life-support mask or similar.

Item	TL	Effect	Kg	Cost
Artificial Gill	8	Unlimited breathing in oxygenated water	4	Cr4000

ATMOSPHERIC DIVING SUIT

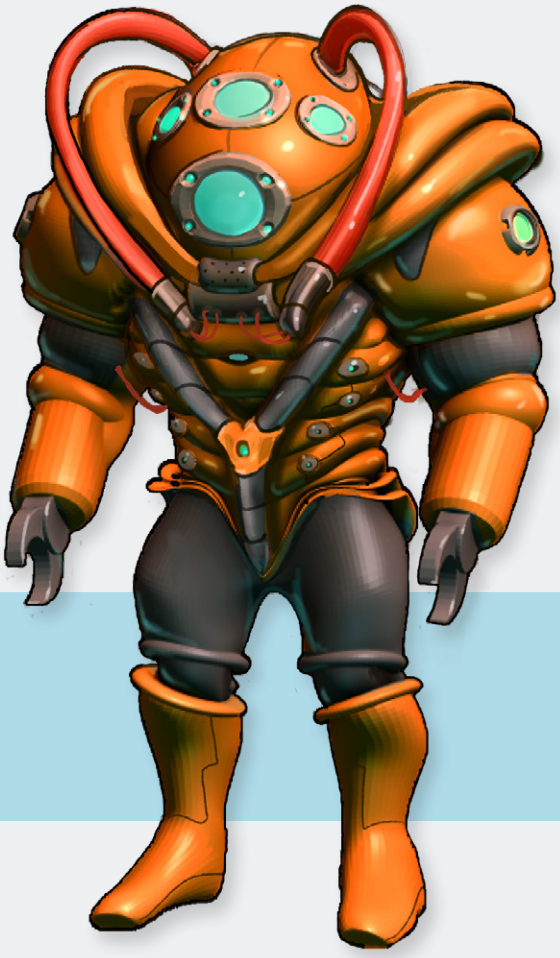
This is a rigid suit capable of allowing a diver to operate safely to depths of around 800 metres. The atmospheric diving suit is large and clumsy but allows underwater expeditions of up to three hours without requiring pre-breathing or breathing a gel. It provides Protection +4.

Item	TL	Effect	Kg	Cost
Atmospheric Diving Suit	7	Descend to 800 metres without pre-breathing, 3 hours air supply, Protection +4	30	Cr24000

DEEP-DIVING SUIT

An armoured suit designed to allow the wearer to operate in extremely deep water. The deep-diving suit includes an advanced gel-breathing system which is tremendously unpleasant to use but allows six hours of operation. The gel is tiring to breathe and is uncomfortable in both donning and removing the suit, as the wearer must 'drown' in the gel and then get it out of their lungs afterwards. The deep diving suit will allow a wearer to descend to 600 metres below sea level, increasing by 100 metres for each TL above 8. Extreme suits are also available, with each extra 100 metres diving depth adding Cr5000 to cost and four kilograms to mass. It provides Protection +4 to the operator.

Item	TL	Effect	Kg	Cost
Deep-Diving Suit	8	Descend to 600+ metres depth, breathing gel, 6 hours 'air' supply, Protection +4	22	Cr20000



Deep-Diving Suit

DIVE SUIT

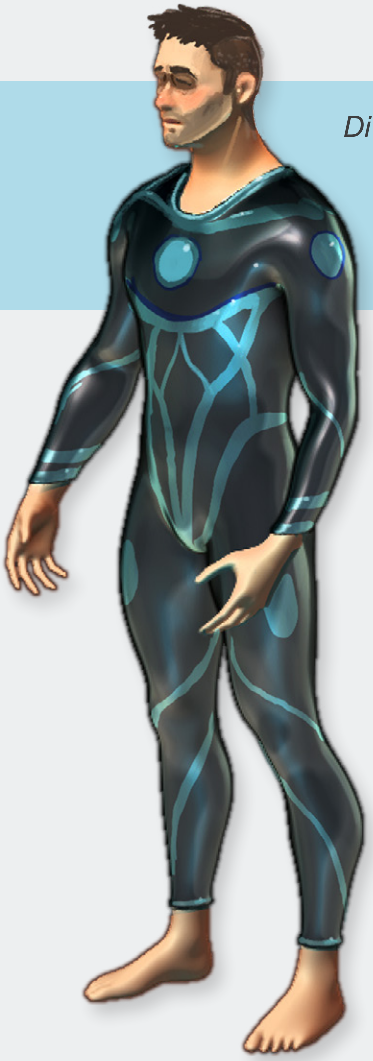
A basic wet or dry diving suit designed to give a swimmer some protection from cold water. It requires swimming equipment to be effective and is compatible with underwater tanks, rebreathers and artificial gills.

Item	TL	Effect	Kg	Cost
Dive Suit	6	Basic dive suit with some cold water protection	1	Cr60

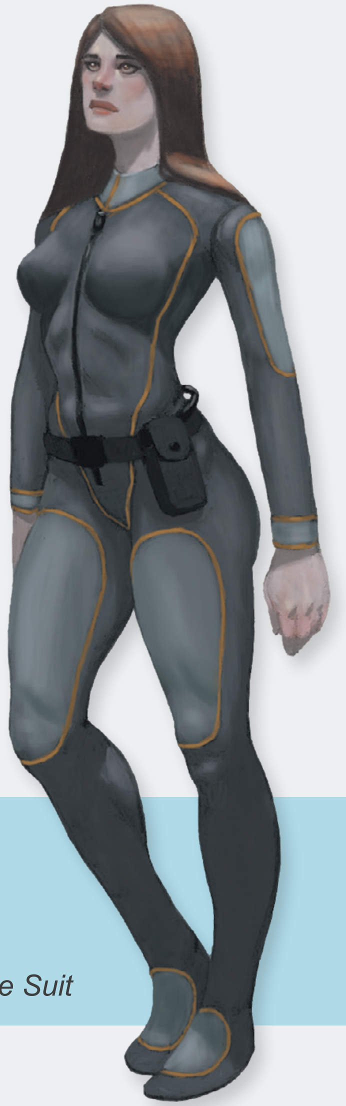
HEATED DIVE SUIT

An insulating suit fitted with small heater coils powered by a belt battery unit. A heated dive suit allows the wearer to operate without harm in very cold water. It requires swimming equipment to be effective and is compatible with underwater tanks and artificial gills.

Item	TL	Effect	Kg	Cost
Heated Dive Suit	8	Dive suit for very cold water (0°C)	4	Cr650



Dive Suit

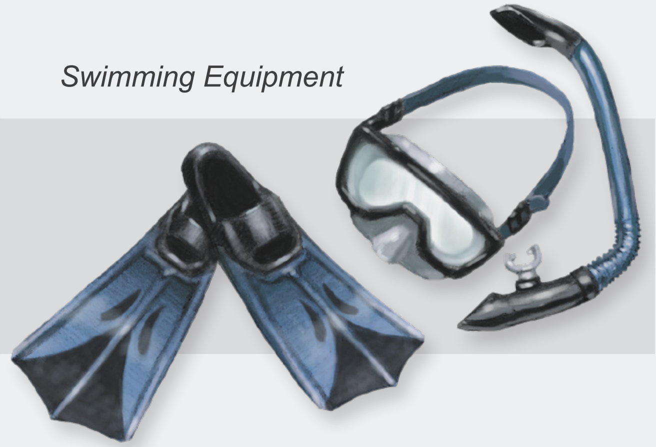


Heated Dive Suit

SWIMMING EQUIPMENT

Includes swim fins, face mask and a snorkel. Improves speed and manoeuvrability underwater. Without swimming equipment, movement speed is halved and underwater tasks suffer an additional DM-2 unless the Traveller has amphibious or aquatic traits.

Item	TL	Effect	Kg	Cost
Swimming Equipment	3	Improves speed and tasks underwater	3	Cr100



Swimming Equipment

UNDERWATER AIR TANKS

Similar to oxygen tanks but designed for use underwater. Two tanks last six hours and a refill costs Cr20 for the proper atmospheric mixture for any species.

Item	TL	Effect	Kg	Cost
Underwater Air Tanks	5	Two tanks providing 6 hours of air supply	12	Cr800

WATER DYE

A tube of liquid dye which can be used to highlight a patch of water with a bright, easily spotted colour visible from the air. The primary drawbacks of this form of signalling are the short duration of the coloured patch (which lasts around 15 minutes in calm waters and far less in stormy weather) and the fact it cannot be spotted at night. At TL9, the latter problem is overcome by using a phosphorescent dye which is visible both at day and at night.

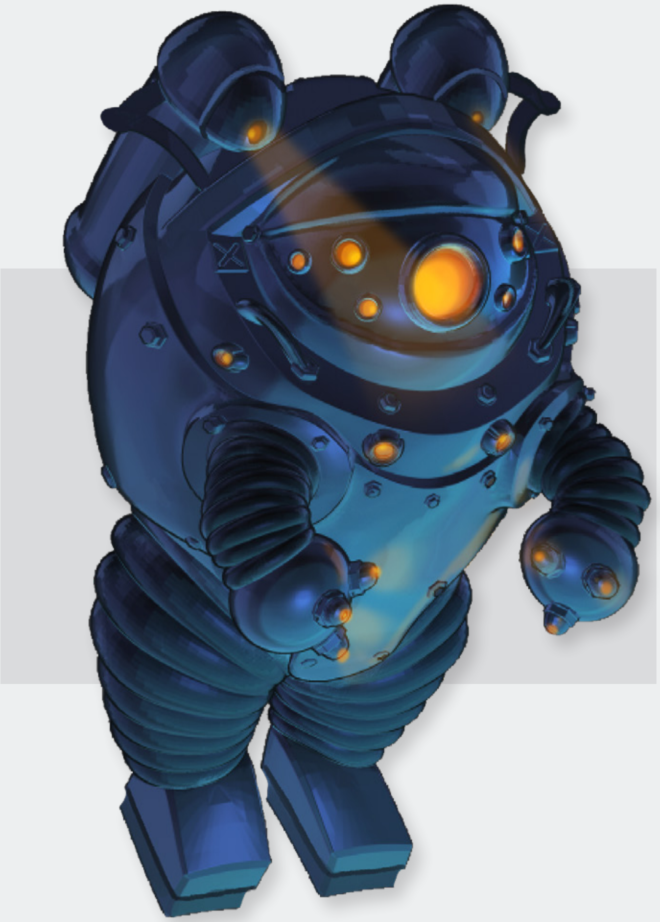
Item	TL	Effect	Kg	Cost
Water Dye	4	Coloured dye for signalling in water	—	Cr25
Water Dye, phosphorescent	9	+Phosphorescent for night visibility	—	Cr25

VERY DEEP OPERATION DIVING SUIT

The Very Deep Operations (VDO) diving suit is an extremely tough piece of equipment that allows a wearer to descend safely to depths of more than 1,200 metres. Its manipulators are clumsy (providing DM-2 to any physical task checks) but there are few better choices for working outside a vessel in the deep ocean. The internal air supply will run for six hours. The hardened suit provides Protection +12 and does not require pre-breathing.

The VDO diving suit requires training to use. An operator without Profession (diver) 2 or Vacc Suit 2 will suffer an additional DM equal to the missing skill level to all tasks checks while using the suit. This is added to the unskilled DM-3.

Item	TL	Effect	Kg	Cost
VDO Diving Suit	8	Descend to 1,200 metres without pre-breathing, Protection +12	36	Cr50000



Very Deep Operation Diving Suit

MOUNTAINS AND CLIFFS

While some Travellers might be comfortable free-climbing mountains and sheer cliffs, the less skilled or more cautious rely on equipment to safely reach great heights or to descend down steep crevasses.

CLIMBING HOIST

The hoist is a battery-powered motor which drives a reel with 25 metres of cable that can support up to 150 kilograms. It has a hook on one side for attachment to a belt or harness and another hook on the opposite side of the cable. A rocker switch in the handle controls directions and an adjustable clutch controls speed; the reel can also freewheel. The battery lasts for one hour. A hand brake can lock the cable in position and a centrifugal brake keeps the cable from unwinding too rapidly.

Item	TL	Effect	Kg	Cost
Climbing Hoist	8	Motorised hoist with 25m cable, 150kg load	4	Cr175

CLIMBING KIT

A set of accessories designed to make climbing easier. Includes a safety harness, gloves and rock shoes, belt with secure holders for tools and head protection. The kit provides DM+1 to checks to climb rock surfaces. At TL8, the kit includes a lightweight harness suitable for abseiling or rappelling, expanding mini-pitons for small rock crevices and more advanced versions of the accessories in the basic kit, providing DM+2 to checks to climb rock surfaces.

Climbing Kit	TL	Effect	Kg	Cost
Basic	4	DM+1 to climbing-related checks	4	Cr100
Improved	8	DM+2 to climbing-related check	2	Cr500

GRAPNEL AND CABLE

A hooked device used to attach a rope for climbing purposes, plus 10 metres of stout cord (100kg load). Grapnels can be thrown or propelled by a grapnel launcher. Getting one to attach itself can be tricky and requires an Average (8+) DEX check; attaching to smooth surfaces or trying to get the grapnel to bite into soil will increase the difficulty.

Item	TL	Effect	Kg	Cost
Grapnel and Cable	2	Grapnel hook with 10m cord, 100kg load	2	Cr35

GRAPNEL LAUNCHER

A grenade launcher-like device used to propel a grapnel to its target using gas or small explosives, with a maximum range of 25 metres. If used as a weapon, it deals 2D damage but has DM-2 to attack rolls. Three additional charges cost Cr50 and mass one kilogram. In locales where firearms are prohibited or heavily restricted, the grapnel launcher many have limited or no Availability.

Item	TL	Effect	Kg	Cost
Grapnel Launcher	7	25-metre-range grapnel launcher.	3	Cr100

PITONS

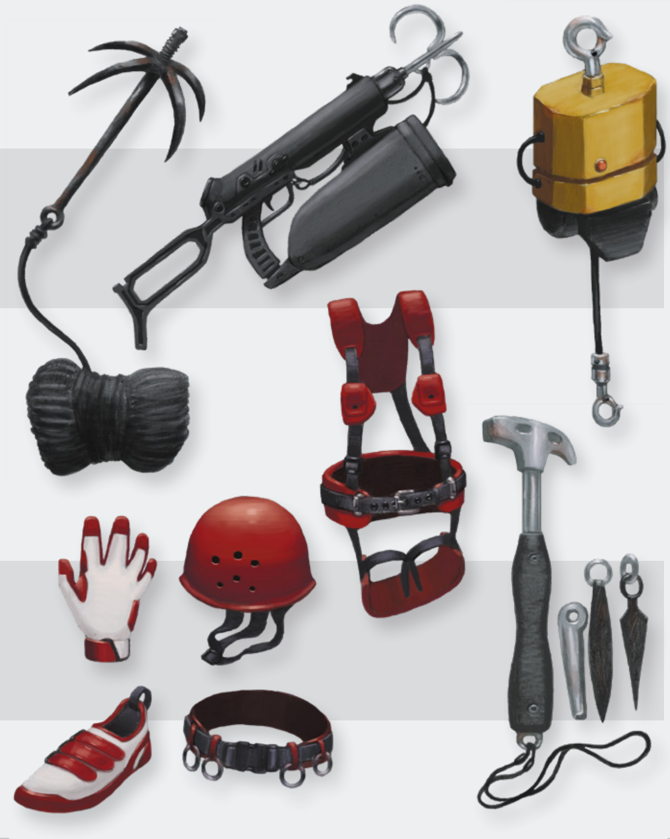
Metal spikes designed to be hammered into rock crevices to secure a rope for climbing.

Item	TL	Effect	Kg	Cost
Pitons	4	Set of spikes to secure rope for climbing	2	Cr5

PITON HAMMER

A small hammer used for hammering pitons into rock.

Item	TL	Effect	Kg	Cost
Piton Hammer	4	Hammer for pitons	—	Cr10



PORTABLE POWER SYSTEMS

Most technological devices need power. In civilised regions, access to a power grid is as universal as access to a data network but while base stations can beam data across a region and satellites connect a whole world, such solutions are not normally available for power. Uninhabited or primitive worlds have no access to power that is not naturally generated. Travellers can take power generators into the field to support their equipment. Some rely on fuel, others on natural forces such as sunlight or wind. Power storage devices such as batteries or fuel cells – generically considered 'power cells' – can store power until needed but do not produce energy on their own. Once drained, they require an external power source to recharge them.

Permanent energy generation systems suitable for a large outposts or settlements are beyond the scope of these portable – or at least vehicle-transportable – generators. A larger array of the described portable systems could meet an installation's needs but more efficient single units can be designed.

SIZING

Portable power generators are rated by the output, ranging from Extra-Small to Extra-Large. Sizes scale by a factor of five. These sizes define the general uses and capabilities of the generators:

- **Extra-Small:** Recharges a Traveller's personal electronic devices, such as portable computers, mobile comms, hand-held lighting instruments, stunner power packs and suit heaters.
- **Small:** Supports a single habitat or advanced base module and allows recharging of personal laser weapon power packs.
- **Medium:** Supports a full-sized family home or an advanced base of five total modules. Can recharge power packs for battle dress, human portable plasma and fusion weapons and light electric vehicles.
- **Large:** Supports an advanced base in a hostile environment with life support and temperature control. Can recharge small vehicle-mounted weapons (up to 250 kilograms) and electric vehicles. A single laser rifle or carbine can operate directly from a large generator with the proper adapters.
- **Extra-Large:** These generators strain the definition of 'portable' but may be required for some installations. Can recharge electric G-carriers or heavy trucks and vehicle-mounted weapons up to 1,250 kilograms. A human-portable heavy laser weapon can operate directly from the power of this generator.

These sizes represent the maximum capabilities of a generator. Generators will often actually function as one level smaller to reduce wear, cover surge capacity and to account for intermittent operating potential. In general, an installation such as a machine shop, a communications hub or a hostile environment habitat will require a generator one size larger than that required by an installation in a less power-intensive or clement environment.

Additionally, an idling vehicle can act as a generator equivalent to one size smaller than that required to recharge it for a number of hours equal to its remaining range divided by 100.

For the power systems detailed in this section, the mass and cost values assume a Medium rating. Extra-Small versions cost and mass x0.04 these values, Small x0.2, Large x5 and Extra-Large x25. Most power sources scale across this range of sizes. Most nuclear power generators are excepted from this and size limitations are noted in their descriptions.

ANTIMATTER BATTERY

A matter/antimatter reactor built into a small cylindrical package, 15 centimetres thick and 30 centimetres long. The battery operates automatically with no need for external maintenance and includes sufficient fuel to operate for over a decade while producing enough power to recharge most weapons or other portable devices. Both smaller and larger antimatter batteries are available but these devices are tightly controlled, although they are nearly impervious to damage (Protection +50) and destructive discharge (at 100%, exploding with 6DD, Blast 200, Radiation). Antimatter batteries are not rechargeable.

Item	TL	Effect	Kg	Cost
Antimatter Battery	18	10+ years power	5	MCr1

Antimatter Battery

FISSION MICROREACTOR

This small reactor is designed to provide constant power to remote locations and hostile environments where other power sources are not available or reliable. This miniature fission unit lacks adequate shielding to be placed within a building. Without protection, a person standing one metre away will absorb one rad per hour, a relatively small amount that will kill within a few months. A fission microreactor is typically buried in the ground with its cooling radiator, a disk some three metres in diameter, exposed to the surface. Alternatively, it is placed sufficiently far away, up to 100 metres, from a habitat to nearly eliminate the radiation risk. The latter solution still causes damage to the surrounding environment on habitable worlds and risks severed power connections in any environment. Safely deploying a reactor requires 16 person-hours, appropriate tools and excavation implements.

A fission microreactor will not scale smaller than Medium size but will provide power with little need for maintenance for up to 25 years. These reactors have severely restricted availability on most worlds, as their components are extremely hazardous, although their fuel is not nearly enriched enough to build a nuclear bomb. After 20 + 1D years, these reactors will need maintenance and refuelling, requiring 1D weeks and 50% of their initial cost in parts and fuel.

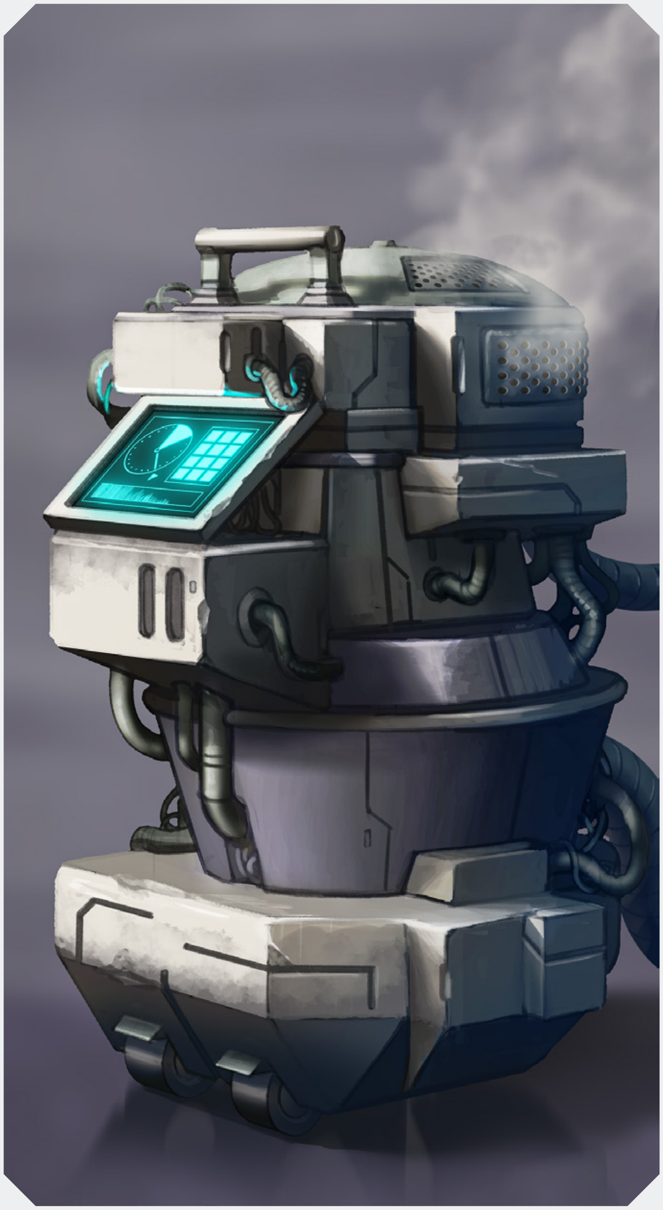
Fission Microreactor	TL	Effect	Kg	Cost
Basic	6	Deployable fission reactor	100	Cr200000
Improved	8	Deployable fission reactor	50	Cr100000
Advanced	10	Deployable fission reactor	20	Cr100000

FUSION PLUS GENERATOR

A Fusion Plus generator will operate for one month off water electrolysed into hydrogen and expels oxygen as a waste gas. It does not require or support external fuel tanks, as its fuel supply is constantly run through a series of cooling and generating tubes to provide fusion at relatively low temperatures. The water doubles as radiation shielding and accounts for half the mass of the reactor. Oxygen is the only waste product, expelled gradually over the generator's period of operation. Deuterium-enriched water, available for Cr500 per recharge, will increase the generator's operating duration by a factor of 10 before it requires refuelling and maintenance.

When the internal fuel storage and cooling system runs dry, the generator must undergo maintenance to its filters and cooling tubes. A generator restart requires a successful Average (8+) Mechanic check (INT or EDU, 1D hours) and a full refuelling. The TL13 generator is not only smaller but will operate for twice as long before requiring refuelling. Although smaller, its deuterium-enriched water supply requires greater enrichment and still costs Cr500 per recharge. A Fusion Plus generator will not scale below Medium size.

Fusion Plus Generator	TL	Effect	Kg	Cost
Basic	10	Portable fusion generator	20	Cr50000
Improved	13	Portable fusion generator	10	Cr100000



HYDROCARBON GENERATOR

A portable generator burning liquid hydrocarbon fuel to generate electricity. At TL5 the generator is an internal combustion device which consumes two litres of fuel per hour; TL8 microturbine generators are more efficient and at TL10 the magnetohydrodynamic (MHD) generator represents the pinnacle of this technology. External fuel tanks and plumbing mass 10 kilograms and cost Cr20 for every 100 litres of capacity. These generators are designed for a specific hydrocarbon fuel source; conversion to a different source of fuel, for instance from gasoline to biodiesel, requires purchase of a new fuel tank, a successful Average (8+) Mechanic check (INT, 1D hours) and Cr50 in parts.

Hydrocarbon Generator	TL	Effect	Kg	Cost
Basic	5	Portable generator; 2 litres/hour fuel	25	Cr100
Improved	8	Portable generator; 1.5 litres/hour fuel	15	Cr350
Advanced	10	Portable generator; 1 litre/hour fuel	10	Cr500

POWER CELL

A power cell is a rechargeable store of energy, either taken from a local grid or produced by portable generators. It may use battery, fuel cell or another technology but is a self-contained unit with inverters and output plugs to allow the charging of buildings, lights, portable electronics and similar devices. A power cell unit stores enough energy to provide Medium power for one hour or Extra-Small power for a full day but will last longer if used intermittently. A power cell's efficiency refers to what percentage of input from the power sources is available for output from the power cell.

Power Cell	TL	Effect	Kg	Cost
Basic	8	Power storage: 1 hour output; 80% efficiency	30	Cr2000
Improved	10	Power storage: 1 hour output; 90% efficiency	12	Cr1000
Advanced	12	Power storage: 1 hour output; 95% efficiency	6	Cr1000

RTG GENERATOR

A radioisotope thermoelectric generator (RTG) produces electricity by radioactive decay. These are highly controlled, with limited private availability, as their active components are extremely radioactive, although not able to be harvested to make a nuclear weapon. Without protection, a person standing one metre from an RTG will absorb two rads per hour. As with fission microreactors, these are normally buried or placed far from an inhabited area. Such site preparation requires 16-person-hours but no special tools. An RTG is a sealed unit producing power strictly from the heat generated by radioactive decay. An RTG will scale down to Extra-Small but units will not scale above Medium size, although an array could be deployed to provide sufficient power for larger needs. Long duration RTGs are also available, operating at one size less power output but lasting five times as long. The RTG cannot be reused once depleted and proper disposal costs as much as the original unit.

RTG Generator	TL	Effect	Kg	Cost
Basic	7	Power for 3 years	100	Cr200000
Improved	9	Power for 4 years	75	Cr500000
Advanced	11	Power for 5 years	50	MCr1

RTG Generator

SOLAR PANEL ARRAY

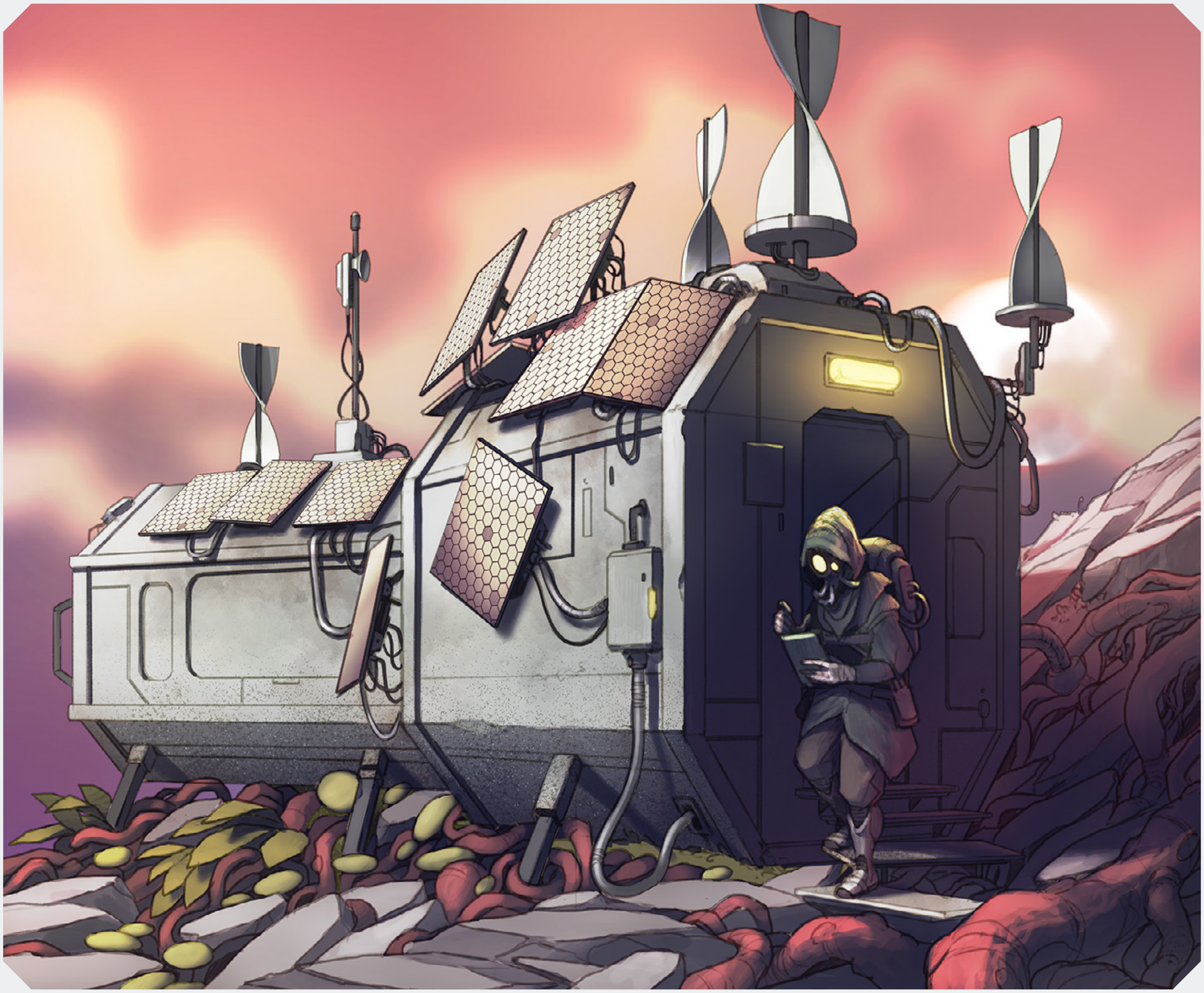
A portable solar panel is a set of foldable panels and their supports which provide equivalent power output to a hydrocarbon generator. These may power and recharge equipment or store energy in a power cell. A solar panel only works in daylight and is considerably less useful in overcast weather.

Solar Panel Array	TL	Effect	Kg	Cost
Basic	7	Solar energy	100	Cr2500
Improved	9	Solar energy	50	Cr5000
Advanced	11	Solar energy	20	Cr8000

WIND TURBINE

The portable wind turbine consists of an expandable tripod or plate base stand, a telescoping tube and a turbine of blade or helical design. At capacity, it is the equivalent of a hydrocarbon generator but it is an intermittent source of energy and in many locations actual average efficiencies may be less than 20%. A wind turbine requires moderate wind speeds to function. Very strong winds will exceed its operating parameters and force it to shut down to avoid destruction. A wind turbine will only function at half power in Thin atmospheres, quarter in Very Thin atmospheres and not at all in Trace or Vacuum. In Dense atmospheres the wind turbine cannot exceed its rated power and may be forced to shut down in even moderate winds unless specifically built for a Dense atmosphere – at costs and mass which essentially increase to match any added energy benefit.

Wind Turbine	TL	Effect	Kg	Cost
Basic	7	Wind energy	60	Cr500
Improved	9	Wind energy	30	Cr1000
Advanced	11	Wind energy	10	Cr2000



VACUUM ENVIRONMENTS

Vacuum is not an ideal environment for anyone. Travellers who find themselves in space should at the very least have a functioning vacc suit but sometimes this is not possible or enough. These items can help the Traveller survive environments without air.

BULKHEAD PATCHES

A set of variously-sized rigid and flexible bulkhead patches, plus adhesives and sealant to allow pressure breaches in a spacecraft to be temporarily repaired. The patches are no substitute for real damage control and tend to fail after 4D hours. They are mainly used to allow the crew time to make a more permanent repair.

Item	TL	Effect	Kg	Cost
Bulkhead Patches	10	Temporary repair of pressure breaches	—	Cr150

IRIS VALVE OPENER

A crank device designed to allow iris valves to be slowly opened or closed when no power is available. This task is slow and strenuous, taking 1D minutes.

Item	TL	Effect	Kg	Cost
Iris Valve Opener	10	Crank for manual iris valve operation	3	Cr200

PERSONAL RE-ENTRY KIT

A personal re-entry kit is designed to permit a user to survive insertion into a planetary atmosphere without a vehicle. Normally used as a last-ditch survival measure, the technique of meteoric assault has been developed by the military into a standard combat tactic. It is also an extreme sport in some areas.

A re-entry kit consists of an alignment thruster, altimeter and a parawing, plus an ablative heat shield. The latter is deployed in the form of a frame and a foam covering that sets hard in seconds. If the user gets it just right, they can make a controlled re-entry to any world with at least a Thin atmosphere, protected from heat by the shield and finally making a descent by parawing. The procedure is complex and dangerous when inserting into a Standard atmosphere, requiring a Difficult (10+) Flyer (wing) check (2D minutes, DEX). Thin and Dense atmospheres represent an even greater challenge, making the check Very Difficult (12+). Failure will likely result in a fiery death or terminal impact with the ground.

Some individuals make a sport of personal re-entry. It is banned on many worlds, for safety reasons. Re-entry computers are available, which can function as an autopilot for emergency re-entry. The computer costs Cr2500 and allows an untrained user to attempt re-entry with a reasonable chance of success by granting Flyer (wing) 2 skill to the re-entry check.

The kit is not reusable but the computer can be installed in a new kit if the re-entry was successful.

Item	TL	Effect	Kg	Cost
Personal Re-Entry Kit	8	Re-entry from orbit without a spacecraft	50	Cr15000
Re-Entry Computer	8	Flyer (wing) 2 for re-entry survival check	—	Cr2500

PORTABLE AIRLOCK

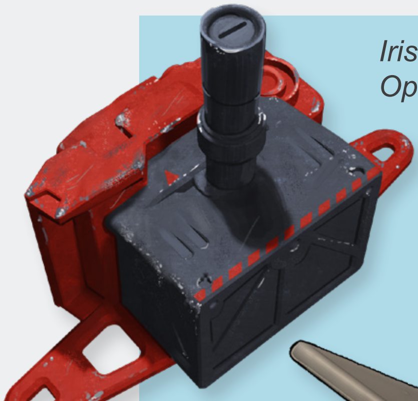
A flexible pressure tent kept rigid by a collapsible frame, the portable airlock has two openings and can be attached to a bulkhead to create an emergency airlock. It is most commonly used when cutting into a starship hull for rescue purposes, preserving the environment inside, but can be also used to seal a building against NBC conditions. The airlock is big enough for two vacc suited people to use at once and is reasonably robust. It comes with a small rechargeable air bottle to initially inflate it but then relies on pressure from the area being cut into to remain inflated.

Item	TL	Effect	Kg	Cost
Portable Airlock	9	Inflatable emergency airlock	8	Cr1000

RESCUE BUBBLE

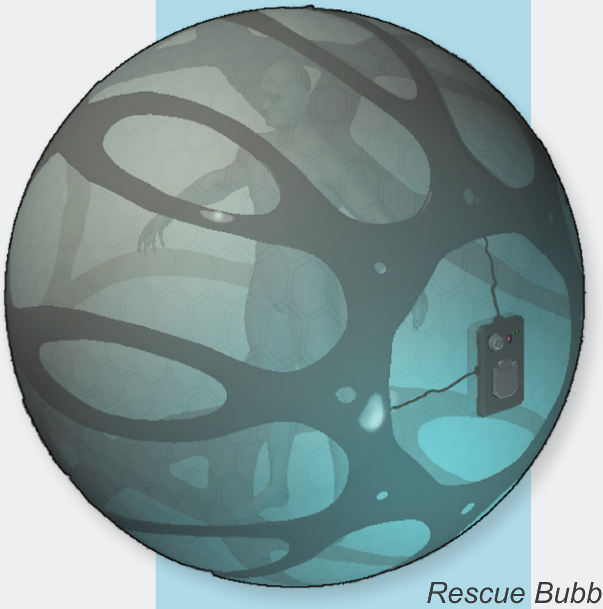
A two-metre-diameter inflatable plastic bubble. Piezoelectric layers in the bubble wall translate the Traveller's movements into electricity to recharge the bubble's own batteries and power its distress beacon, and a small oxygen tank which both inflates the bubble and provides two person-hours of life support. Rescue bubbles are found on both space and sea vessels as emergency lifeboats.

Item	TL	Effect	Kg	Cost
Rescue Bubble	9	Inflatable 2 metre pressurised ball with 2 hours air	2	Cr600



Iris Valve Opener

Personal Re-Entry Kit



Rescue Bubble

THRUST PISTOL

A handheld reaction jet using compressed gas, the thrust pistol allows independent manoeuvre in zero-G vacuum conditions. The pistol's internal reserves allow for an hour of moderate manoeuvring or three minutes of continuous thrust at 0.1G acceleration for one person with vacc suit and equipment.

Item	TL	Effect	Kg	Cost
Thrust Pistol	7	Zero-grav manoeuvring system	1	Cr1000

VACC EMERGENCY KIT

A belt-carried pack, this emergency kit is designed to allow a vacc suited user to save themselves or someone else in the event of an accident and to increase the chances of a search finding them. Yanking a lanyard releases a tethered balloon reflector. This is somewhat similar to a rescue bubble but filled at very low pressure. It inflates into a three-metre-diameter radar reflector which is tethered to the user's belt. It vastly increases the user's radar cross-section and makes a search more likely to find them. The kit contains a radio beacon/repeater, a handheld strobe beacon, tethering cord, suit patches, spray sealant for multiple small holes, a 30-minute replacement air bottle and two hand-held gas thruster units. The latter are designed to allow the stranded Traveller a last-ditch attempt to reach safety in zero-G conditions. The kit also contains a metallic reflectorised blanket which increases radar detection and reduces absorbed radiation by 100 rads in the event the user is caught outside in a solar flare.

Item	TL	Effect	Kg	Cost
Vacc Emergency Kit	7	Vacuum survival and rescue aids	4	Cr500

Thrust Pistol

Vacc Emergency Kit

WILDERNESS HOUSING

For protection from the elements while resting or for maintaining an isolated camp or outpost, many housing choices are available, ranging from a simple sheet to keep out the wind and rain up to advanced bases configured to withstand the rigours of almost any environment.

ADVANCED BASE

A modular, pressurised shelter capable of withstanding anything less than hurricane force winds. The shelter offers excellent protection from precipitation and all but the most extreme temperature conditions. The base consists of a power unit equivalent to the Medium hydrocarbon generator (see page 118) with six hours of backup power cell capacity, a main cabin to house it, plus associated support equipment – fuel and water tanks (600 litres each), food storage containers, a small galley and freshers. This central unit supports up to four cabin modules which connect to it in a variety of ways. All modules are six metres long by four metres wide by three metres high, or 72 cubic metres, and can be placed end-to-end, side-to-side or even stacked, although this can result in stability problems.

The main power/galley/storage module takes about 16 person-hours to set up. It powers the other modules and handles recycling of water and similar tasks for them. Additional modules beyond the basic four can be added but extra units can strain the power plant. However, empty modules used for storage need not be heated, lit, nor use water so the extra load is only significant if power is needed. The main module supports connections to secondary and tertiary power sources, a spare generator, solar or wind arrays, or a larger power cell bank, all purchased separately.

The unpowered modules are the same size as the main unit and take about four person-hours each to assemble. A set of accommodation furnishings is fitted, although these can be removed. The usual setup is for three modules each to house two people and the fourth used as a common area, with freshers, galley and other facilities shared by all personnel. The base complex is easily able to support six residents but there is little room for work. If more than living quarters are required, additional modules must be purchased.

The advanced base comes with the main (powered) cabin unit plus four additional unpowered modules. The TL10 version includes a Fusion Plus generator to provide support for up to a month without need for fuel replenishment or up to 10 times as long by using deuterium-enriched water (Cr500) as fuel.

Dismantled and ready for shipment, the advanced base displaces six ship tons, with each additional module taking up 0.5 tons of cargo space when properly crated. A single fully expanded module would occupy five ship tons. The walls of advanced base modules provide Protection +4 against external damage.

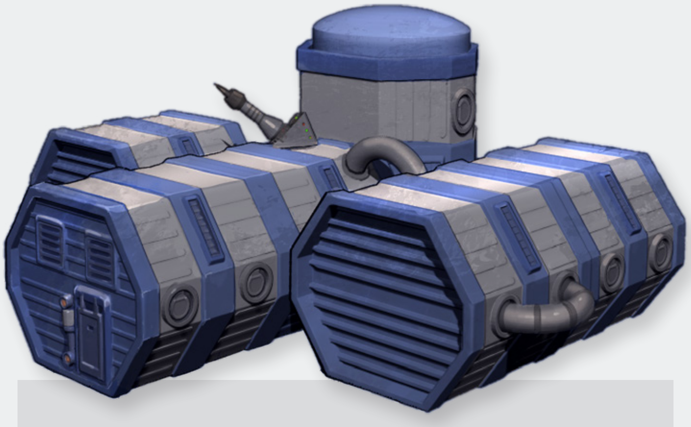
Advanced Base	TL	Effect	Kg	Cost
Basic	8	5 total modules, Hydrocarbon generator	6,000	Cr75000
Improved	10	5 total modules, Fusion Plus generator	6,000	Cr120000

ADVANCED BASE OPTIONS

These options are available only to advanced base modules, not the other wilderness housing items in this catalogue.

An additional 'blank' powered module, containing only a power plant able to support four other modules, costs Cr15000. The blank powered unit can be configured like any other module. Adding 24-hour power cell backup to an existing or additional power unit costs Cr40000 or Cr24000 at TL10.

Some purchasers pay an additional Cr1000 per module for the 'foam dome' option. This is a framework over which a thin covering is stretched and sprayed with a fast-setting foam similar to that used in personal re-entry kits. The foam dome hardens in moments and provides improved protection against micrometeorites and inclement weather. It increases a module's Protection to +8. Solar panel arrays and/or wind turbines (see page 119) are often added as roof-mounted options to supplement the power generator.



Advanced Base

Item	TL	Effect	Kg	Cost
Additional Blank Module	8	Module capable of supporting 2 persons	1,000	Cr5000
Additional Power Module	8	Hydrocarbon, supports itself + up to 4 modules	2,000	Cr15000
Additional Power Module	10	Fusion Plus, supports itself + up to 4 modules	2,000	Cr60000
Corrosive protection	8	Per module: Corrosive, extreme temperature	—	Cr100000
Foam Protection	8	Per module: Micrometeorite and weather	10	Cr1000
Life Support, short term	8	Per module: 1 week for 2 persons	—	Cr20000
Life Support, long term	8	Per module: 90 days for 2 persons	—	Cr100000
Life Support supplies	8	Per module per period	50	Cr1000
Power Cell Backup, Basic	8	24 hour support for 5 modules	720	Cr40000
Power Cell Backup, Improved	10	24 hour support for 5 modules	288	Cr24000

While airtight and pressurised, the advanced base modules do not include life support options by default. They will protect against atmospheric Taint and Very Thin atmospheres (using compressors) and insulate against temperatures from 200°C to -200°C. A module can add short- or long-term life support capability to support Vacuum, Trace and Exotic atmospheres. These options include a small collapsible airlock foyer. Advanced base modules are not constructed to support artificial gravity, as this would require greater power and structural elements.

Short term (one week) life support for two persons adds Cr20000 to the cost of a module. Long term life support includes closed loop systems to recycle air, water and waste for up to 90 days without replenishment at a cost of Cr100000 per module. Replenishment and maintenance at the end of each life support duration requires Cr1000 and 50 kilograms in replenishment supplies per module.

Adding support for Corrosive environments or extremes of temperature (beyond +/- 200°C) costs an additional Cr100000. A life support option is a prerequisite for this level of protection and modules operating in such environments should at least double their power supply to maintain habitability. Modules are generally not constructed to survive Insidious atmospheres – those environments usually require underground accommodations or active measures. Note that hydrocarbon generators normally require atmospheric oxygen to function, although specialised alternatives may be available for certain Exotic atmospheres.

HABITAT MODULE

Modular unpressurised quarters for six people, capable of withstanding anything less than hurricane-force winds. It includes 42 person-days of survival rations, potable water and power cells to maintain minimal lighting and temperature control for one day. Connections to external power sources are available. Quarters are tight, with three bunks, a mini-galley and a very small fresher. The module requires 12 person-hours to assemble. It will protect against Tainted atmospheres and temperatures extremes ranging from +/- 50°C.

Habitat modules can be attached to other modules to form a base. As a stand-alone module, these quarters are intended for short-duration stays and as emergency accommodations. Longer-term activities or those requiring room to do anything other than sleep, eat and shelter in place should consider using an advanced base.

The TL10 version is pressurised and includes life-support for six occupants for one week (1,000 person-hours) and benefits from a collapsible emergency airlock. It adds protection against Vacuum, Trace, Very Thin and Exotic atmospheres and temperatures extremes from +/- 100°C. External power sources are necessary to provide life support beyond one day even in relatively benign temperature environments. The walls of a habitat module provide Protection +2 against external damage.

Habitat Module	TL	Effect	Kg	Cost
Basic	8	Shelter habitat up to 6 persons + week supplies	1,000	Cr10000
Improved	10	+Short-term life support	500	Cr20000

PRE-FABRICATED CABIN

A basic 6 x 4 x 3 metre hut with windows and a door but with no heating, lighting or sanitary facilities fitted. The cabin is capable of withstanding light to severe winds, offering shelter from precipitation, storms and temperatures down to -10ºC. It requires eight person-hours to erect or dismantle. A ‘heat and light’ pack is normally purchased with the cabin, costing Cr1000 and slots into ready holders but requires an external power source. There is no plumbing.

The prefab cabin is often used as an adjunct to an advanced base complex as a work unit or additional storage space but can be used as living quarters for up to four people. It does not support the addition of advanced base options. Dismantled and ready for shipment, the cabin displaces one ton of cargo space. The walls of a pre-fabricated cabin provide Protection +2 against external damage.

Item	TL	Effect	Kg	Cost
Pre-Fabricated Cabin	6	Basic shelter for up to four	400	Cr2000

TARPAULIN

Canvas or waterproof cloth sheet used to create a 2 x 4 metre temporary shelter. Protects against precipitation and can withstand light winds.

Item	TL	Effect	Kg	Cost
Tarpaulin	1	Temporary shelter: 2 x 4 metre sheet	4	Cr10

TENT

Basic shelter for two persons offering protection from precipitation, storms and temperatures down to 0ºC and is able to withstand light to moderate winds. At TL7, the tent can be pressurised and will protect against conditions down to -20°C but does not have life support. There is no airlock – the tent is depressurised when opened.

Tent	TL	Effect	Kg	Cost
Basic	3	Basic shelter habitat up to 2 persons	6	Cr200
Improved	7	+Pressurised	5	Cr2000

TENT-BARRACKS

A large tent providing shelter for eight people against the weather and environment. The pole structure requires 1D person-hours to set up properly. The TL8 version of the tent-barracks can be effectively pressurised using a chemical seal from the inside but does not have life support. There is no airlock – the tent depressurises when it is opened.

Tent Barracks	TL	Effect	Kg	Cost
Basic	6	Basic shelter habitat up to 8 persons	10	Cr500
Improved	8	+Pressurised	10	Cr5000

Habitat Module
Pre-Fabricated Cabin
Tent-Barracks
Tent
Tarpaulin

TOOLS

When travelling between the stars, there is no guarantee you will end up on a civilised world with capable tradesmen. Beyond the frontier, Travellers have to rely on themselves and the quality of tools they have had the foresight to bring with them. From fixing broken equipment to building a civilisation from scratch, the tools in this section will allow a Traveller to accomplish great things.

When tasks are attempted without the required tools, they suffer DM-2 to the check. A Referee may allow improvised tools to reduce this modifier to DM-1. Some tools have TL restrictions and in other cases, at the Referee's discretion, attempting tasks using tools more than two Tech Level less advanced than the equipment worked upon may result in negative modifiers similar to those for lacking or improvised tools. Toolkits more than two Tech Levels greater than the equipment being worked on may grant DM+2 to related checks (Or may be entirely inappropriate – a chip reader will not work on a vacuum tube).

Some toolkits or sets rely on consumables to allow Travellers to accomplish their tasks. If the Referee cares to track such things, a toolkit contains enough consumables to support a month of full-time work before requiring replenishment at a cost of 10% of the item.

CARPENTRY TOOL SET

A basic set of woodworking equipment including standard tools necessary to cut, shape and build with wood or similar material.

Item	TL	Effect	Kg	Cost
Carpentry Tool Set	2	Woodworking tools	12	Cr300

Carpentry Tool Set

CHAIN

A moderately heavy 10-metre chain, suitable for heavy lifting or towing, or to anchor a light water vessel. Will support up to 250 kilograms if used as a rope.

Item	TL	Effect	Kg	Cost
Chain	4	10 metre chain, 250 kilogram load	6	Cr100

CHAINSAW

A motorised saw for cutting and shaping trees or similar material. The chainsaw can possibly be used as a weapon but it is very awkward and inflicts DM-2 to attack rolls. Damage is 4D if it does strike home. At TL8 and above, these are battery-operated and function in oxygen-free environments.

Item	TL	Effect	Kg	Cost
Chain Saw	6	Motorised cutting tool. Melee: DM-2 to attack rolls, 4D	6	Cr50

COMBAT ENGINEERING TOOL SET

A specialised toolkit for the construction of field fortifications and removal of obstacles, along with other military applications. A basic kit contains spades, entrenching tools, wire cutters, probes, marking tape and the like. It does not change significantly until TL6, at which point a small metal detector is included. From TL8 onwards, a dozen explosive strips are included. These can be used for cutting, moving/cracking small obstructions or detonating mines. The TL6 and TL8 tool sets grant DM+1 and DM+2 to related skill checks respectively.

Combat Engineering Tool Set	TL	Effect	Kg	Cost
Basic	3	Combat engineering tools for field use	12	Cr150
Improved	6	+Metal detector; DM+1 for related tasks	15	Cr300
Advanced	8	+Explosive strips (12); DM+2 for related tasks	15	Cr500

CUTTING TORCH

A basic cutting tool using incandescent gas fed by a heavy canister. Cutting torches are effective against most metals and alloys but will not work on starship hulls or armoured vehicles constructed at TL10 or higher. The improved cutting torch will cut through materials below TL14; those constructed of bonded superdense at TL14 and above require laser cutters or drills.

Cutting Torch	TL	Effect	Kg	Cost
Basic	5	Cuts through metals constructed at < TL10	3	Cr500
Improved	10	Cuts through metals constructed at < TL14	2	Cr5000

ELECTRIC WELDING KIT

A basic arc welding kit useful for many light applications. It is self-powered from batteries but requires an external power source for big jobs. Arc welding gear is really only useful on devices built prior to TL10. The advanced welding kit is necessary for work on materials of TL10 or higher, otherwise weld points become a serious area of weakness and in some cases will not 'take' at all.

Electric Welding Kit	TL	Effect	Kg	Cost
Basic	5	Welding metal parts constructed at < TL9	6	Cr1500
Improved	10	Welding metal parts constructed at > TL10	3	Cr5000

ELECTRONIC TOOL SET

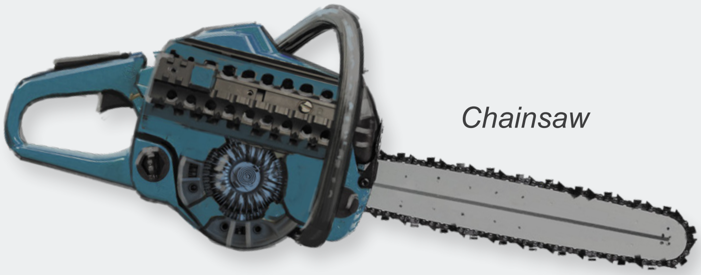
Necessary tools for basic electronic assembly and repair including instruments, meters, soldering gear and so on.

Item	TL	Effect	Kg	Cost
Electronic Tool Set	7	Tools for electronic assembly and repair	2	Cr2000

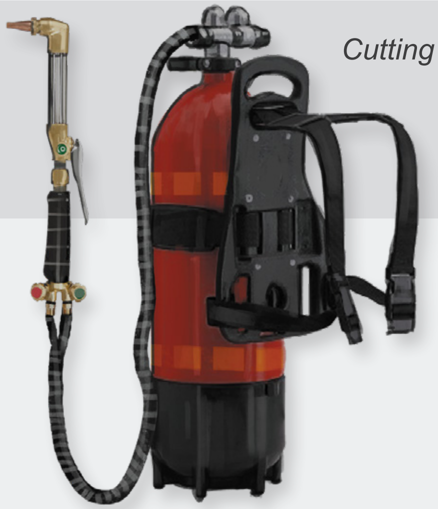
EXCAVATION TOOL SET

A set of basic digging tools; shovels, picks and sledgehammers to equip two to three people. Working with improvised tools instead of these will increase the time taken for any excavation task by at least four times.

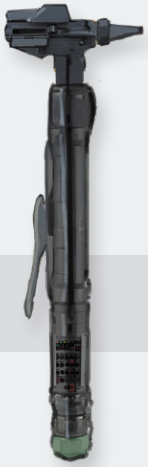
Item	TL	Effect	Kg	Cost
Excavation Tool Set	3	Digging and tunnel equipment for 2–3 people	12	Cr30



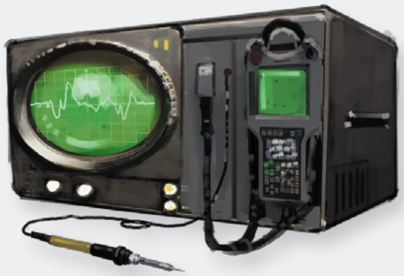
Chainsaw



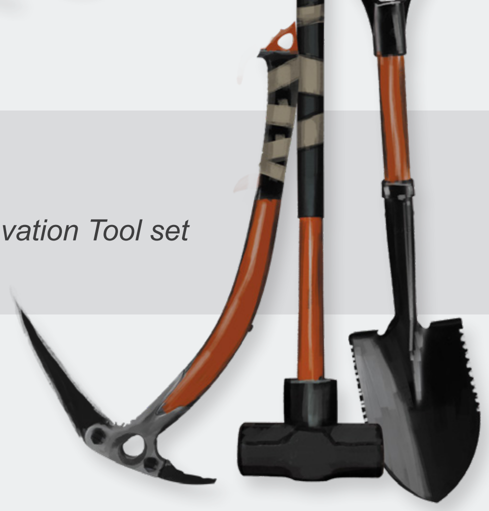
Cutting Torch



Electric Welding Kit



Electronic Tool set

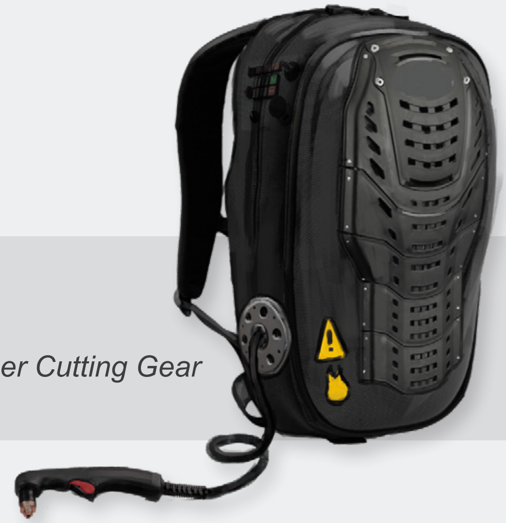


Excavation Tool set

FORENSICS TOOLKIT

A forensic toolkit is a specialised analytical toolkit designed to investigate crime or accident scenes to determine what has occurred. It is used in conjunction with the Investigate skill. With equipment and materials useful in supporting the scientific skills of biology and chemistry, it can often aid in a task chain using one or more Science and Investigate checks to reach a conclusion. More advanced toolkits contain better sensors and analytic equipment, providing DM+1 to Investigate checks at TL10, DM+2 at TL12 and DM+3 at TL14.

Forensics Toolkit	TL	Effect	Kg	Cost
Basic	8	Investigate crime or accident scenes	12	Cr2000
Improved	10	DM+1 to Investigate checks	10	Cr4000
Enhanced	12	DM+2 to Investigate checks	10	Cr8000
Advanced	14	DM+3 to Investigate checks	8	Cr10000



Laser Cutting Gear

LASER CUTTING GEAR

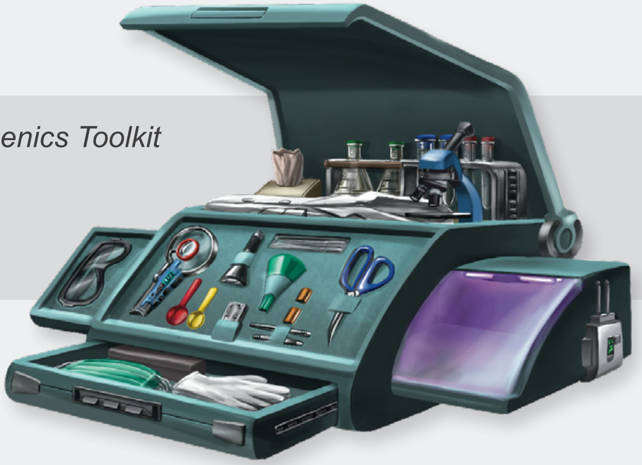
A backpack power supply and laser or plasma cutting unit, this cutting gear is standard for use aboard starships. It can cut through most materials prior to TL16, although cutting through hull armour requires a very long time to create a breach. If used as a weapon, it inflicts DM-2 to attack rolls and has an effective range of 10 metres but deals 6D damage.

Item	TL	Effect	Kg	Cost
Laser Cutting Gear	9	Cuts through metals constructed at < TL16	4	Cr4000

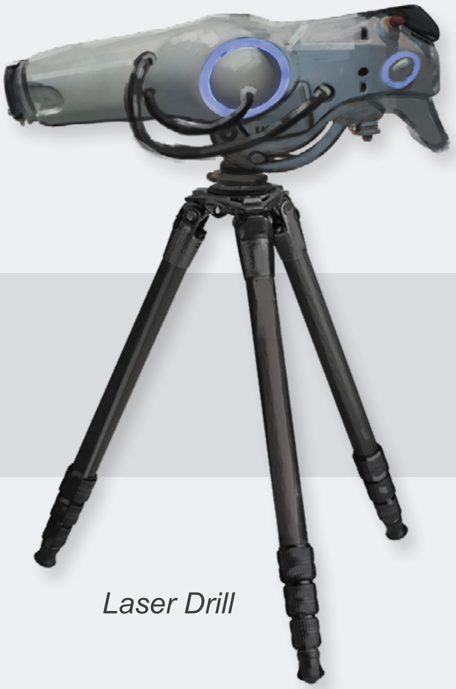
LASER DRILL

A heavy-duty semi-portable laser used for mining, the laser drill is a tripod-mounted projector much more powerful than the laser rifle. It is also more cumbersome and far less accurate, being intended for work at point blank ranges. A power pack (not interchangeable with those used for lighter laser weapons) can be hooked to the drill, providing one hour of intermittent use; a cable can also be run to the power source of a ship, vehicle or prospector's buggy which provides unlimited power at the cost of mobility. Extra powerpacks cost Cr3000 and extra tripods cost Cr250. The laser drill will eventually cut through any known material. If used as a weapon, it inflicts DM-2 to attack rolls with an effective range of 10 metres but will deal 9D damage.

Item	TL	Effect	Kg	Cost
Laser Drill	9	Cuts through any known material, eventually.	16	Cr7500



Forsenics Toolkit



Laser Drill

LASER SCALPEL

A low-power but high-precision handheld laser ‘knife’ the size of a pen, used for medical and other delicate cutting purposes. It carries an internal battery which could support up to 30 minutes of continued operation and it can be hooked up (by a flexible power cord) to an external power source for longer-duration work or recharging. If used as a weapon, it has an effective range of five metres but will inflict only one point of damage. If intentionally aimed at a target’s eyes, it will cause blindness (for 1D hours but permanent in at least one eye on a six) on Effect 6+.

Item	TL	Effect	Kg	Cost
Laser Scalpel	10	Laser tool for medical or delicate cutting	—	Cr2000

MECHANICAL TOOL SET

A set of standard mechanical and plumbing tools including everything necessary to repair and alter mechanical devices: wrenches, pliers and a largish hammer, among other things.

Item	TL	Effect	Kg	Cost
Mechanical Tool Set	3	Tools to repair and alter mechanical devices	12	Cr1000

METALWORK TOOL SET

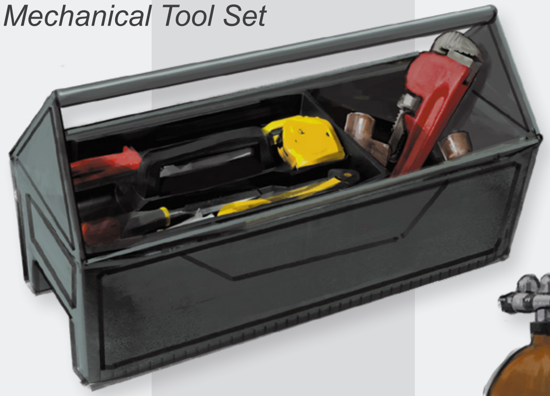
A basic set of tools for working and shaping metal. The TL5 kit includes welding equipment. Metalwork on crystaliron alloys requires the TL10 kit and work on bonded superdense materials requires the TL14 kit.

Metalwork Tool Set	TL	Effect	Kg	Cost
Basic	3	Metalworking tools for metals < TL10	15	Cr1000
Improved	5	+Welding kit	12	Cr3000
Enhanced	10	+Tools for metals TL10–13	10	Cr5000
Advanced	14	+Tools form metals TL14–15	10	Cr10000

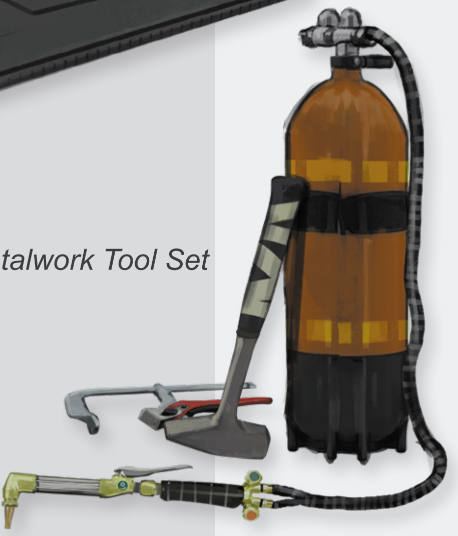
NAVIGATION TOOL SET

A navigation tool set is a subset of surveying and astronomical tools designed specifically for determining location and bearing and is useful for land, sea and eventually air navigation. The basic tool set uses primitive equipment: an astrolabe, compass and astronomical charts. By TL3, the addition of sextant, spyglass, and chronometer allows for more accurate positioning anywhere on a world’s surface, though astronomical knowledge of the locale is necessary to interpret findings. This improved set of tools will provide DM+1 to Navigation checks. By TL5 these tools become miniaturised. By TL8 such tools are generally abandoned on civilised worlds, replaced by local or global positioning networks. DMs from Navigation and Surveying toolkits do not stack; the highest DM applies.

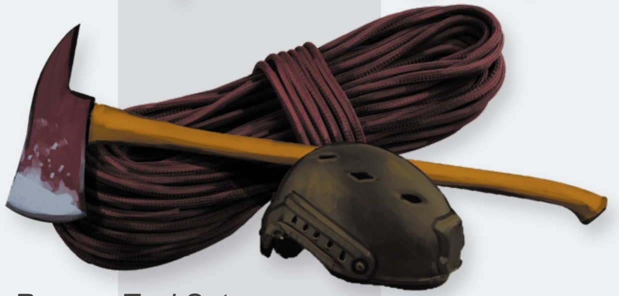
Navigation Tool Set	TL	Effect	Kg	Cost
Basic	1	DM+1 to Navigation checks	8	Cr200
Improved	3	DM+2 to Navigation checks	8	Cr1000
Advanced	5	+Miniaturised	4	Cr2000



Mechanical Tool Set



Metalwork Tool Set



Rescue Tool Set

OFFWORLD CONSTRUCTION TOOLKIT

An offworld construction toolkit contains equipment to aid field construction in a vacuum or similar environment, such as a rockball world with a Trace atmosphere. It is specifically designed to deal with low-gravity situations. The kit consists of enabling equipment, such as anchoring points which can be spiked into the surface of a planetoid or moon to prevent workers from being flung about by their own tools. The majority of tools are powered, along with a few semi-robotic devices to help clear debris.

Item	TL	Effect	Kg	Cost
Offworld Construction Toolkit	9	Tools for construction in low-G or vacuum	42	Cr12500

POCKET MAGNET

A small but very powerful horseshoe magnet capable of lifting one kilogram against 1G.

Item	TL	Effect	Kg	Cost
Pocket Magnet	3	Magnet lifts 1 kilogram at 1G	—	Cr20

RETURN MIRROR

Used in surveying, a return mirror is used to reflect a light beam directly back along its path from within a 15º arc. Includes a folding tripod stand. It is commonly used with a laser rangefinder to give very accurate results.

Item	TL	Effect	Kg	Cost
Return Mirror	4	Surveying mirror with a tripod stand	0.5	Cr500

RESCUE TOOL SET

A comprehensive set of supports, cutting gear (including 'Jaws of Life') and other tools used to reach and rescue trapped persons trapped in damaged vehicles or buildings. The kit does not include any sensors.

Item	TL	Effect	Kg	Cost
Rescue Tool Set	7	Tools for vehicle and building rescue	15	Cr2000

SCIENTIFIC TOOLKITS

Scientific toolkits are tailored to a single Science skill speciality, generally providing DM+2 to checks related to that speciality. Various scientific toolkits are detailed in the *Traveller Core Rulebook* on pages 121–123.

Item	TL	Effect	Kg	Cost
Scientific Toolkit	5+	DM+2 to Science speciality checks	12	Cr2000

SPADE/SHOVEL

A basic digging tool with many uses. A pickaxe or similar tool is available for the same cost and mass.

Item	TL	Effect	Kg	Cost
Spade/Shovel	1	Basic digging implement	1	Cr5

Scientific Toolkits

Cybernetics
Planetology
Life Sciences
Robotics

STARSHIP ENGINEER TOOL SET

A full tool kit for shipboard engineering personnel, including PRIS goggles, iris valve opener, electronic and gravitic test and repair equipment, wrenches, sockets and a large hammer.

Item	TL	Effect	Kg	Cost
Starship Engineer Tool Set	12	Tools to repair starship equipment	12	Cr4000

SURVEYING TOOLKIT

A set of tools used by a surveyor to map a location, determine boundaries and perform Navigation tasks. A basic toolkit includes mechanical instruments, optics, compasses and computational aids. At TL7, the surveying kit adds lasers and electronic devices. The TL9 surveyor toolkit includes satellite navigation locators where available and inertial locators where not and has software to produce instant maps in the field. All versions provide DM+2 to Navigation checks, although setup of the basic and improved versions double the duration required for the check. DMs from Navigation and Surveying toolkits do not stack; the highest DM applies.

Surveying Tool Set	TL	Effect	Kg	Cost
Basic	3	Survey, map, DM+2 to Navigation checks	20	Cr1000
Improved	7	+Lasers and calculators	12	Cr1000
Advanced	9	+Locators and mapping software	8	Cr3000

TOOL LASER

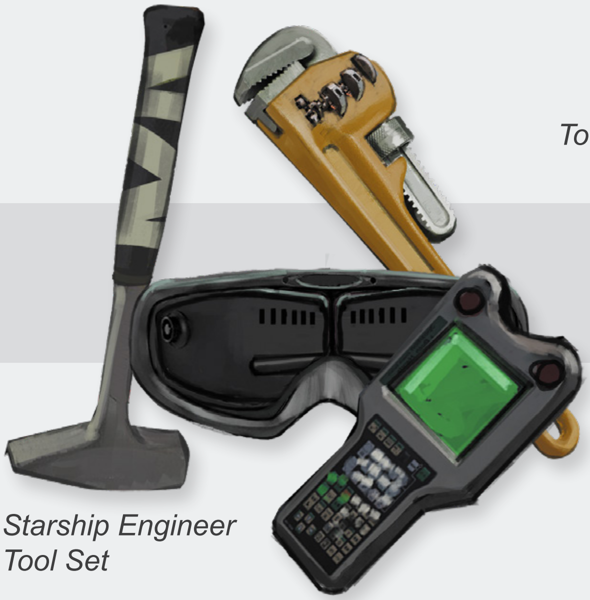
A handheld laser welder/cutting-torch powered by a small internal powerpack (providing power for up to 20 minutes of continual use). The tool laser's energy output is variable and thus can be used from anything from gentle electronic welding to small-scale metalwork or cutting through several centimetres of steel; anything beyond that requires a welding kit or a larger laser. At TL12 the tool laser is about the size of a large flashlight; at TL13 or above it can be as small as a pen. If used as a weapon, it inflicts DM-2 to attack rolls and has an effective range of five metres, dealing 1D damage to a target at full output. Each shot drains one minute of battery power.

Tool Laser	TL	Effect	Kg	Cost
Basic	12	Handheld laser tool	0.5	Cr500
Improved	13	Pen-sized handheld laser tool	—	Cr500

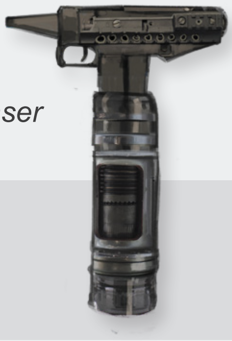
WEAPON ENGINEERING TOOL SET

Tools for the repair and maintenance of weapons. Slug throwers and energy weapons require separate tool sets. The kit costs Cr100 times its Tech Level. Unusual weapons, such as flame throwers and cryojets, usually require their own brand of special toolkit.

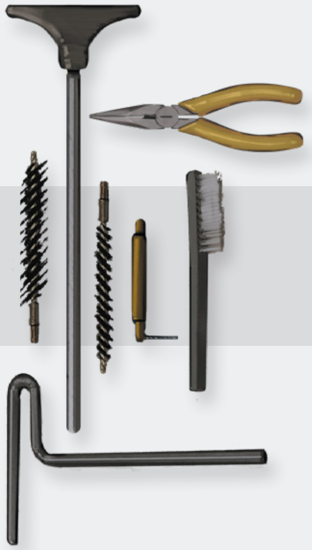
Weapon Engineering Tool Set	TL	Effect	Kg	Cost
Slug Throwers	2+	Maintain, repair, modify slug throwers	12	Cr100 x TL
Energy Weapons	8+	Maintain, repair, modify energy weapons	12	Cr100 x TL



Starship Engineer Tool Set



Tool Laser



Weapon engineering Tool Set

WEAPONRY

Travellers may be able to solve many situations without resorting to combat or other forms of violence. Sometimes, combat is forced upon them, at others it results from the failure of alternative means to resolve an encounter and the Travellers may decide that combat is the most viable method of solving a problem. In all situations, it is important for the Traveller to have the proper tools.

NEW WEAPON TRAITS

Some of the weapons described in these sections have additional weapons traits not described in the *Traveller Core Rulebook*. These are:

Artillery: Artillery weapons shoot projectiles along a ballistic trajectory, allowing them to 'lob' shots at targets out of sight. When firing at a target that can be seen, Artillery weapons follow the usual rules for ranged attacks.

When attempting indirect fire at a target that cannot be physically seen, the attack suffers a DM-2 penalty. In addition, if the precise location of the targets is not known (enemies are behind a wall or have ducked down into a trench, for example) the attack will land 1D metres in a random direction away from them for every 100 metres the target is from the attacker, minus the Effect of the attack roll. A negative Effect will, of course, add to this distance instead.

It is worth remembering that knowing where targets may be does not mean they need to be seen. The use of sensors, as described on page 160 of the *Traveller Core Rulebook*, provide a good indication where enemies are lurking, as can forward observers.

Dangerous: This weapon can be as lethal to its user as the intended target. If an attack roll is made by this weapon with Effect -5 or worse, it explodes. Its damage is inflicted upon the person firing it and the weapon is rendered inoperable.

Fire: This weapon sets a target on fire, causing damage every round after the initial attack. A target can only be set on fire by one Fire weapon at a time – use the highest damage Fire weapon. Left to its own devices, a fire will extinguish itself on a 2D roll of 8+, rolled at the start of every round. However, the Referee may rule it continues to burn so long as flammable material is present. A Traveller may use a Significant Action to extinguish the fire, requiring an Average (8+) DEX check. The Traveller gains DM+2 if using firefighting equipment.

One Use: This weapon is designed to be used just once, completely expending its energy or ammunition and then being rendered useless.

Silent: Most projectile weapons require a noisy discharge of chemical, heat or kinetic energy in order to attack but this weapon channels or removes the excess sound energy also created. Any attempts to detect the source of this sound suffer DM-6.

Smasher: This weapon is particularly heavy and carries a great deal of momentum when it is swung. A Traveller attacked by a Smasher weapon may not attempt to parry it.

Very Dangerous: Only a madman uses a weapon with this reputation. If an attack roll is made with Effect -3 or worse, it explodes. Damage is inflicted upon the person firing it and the weapon is rendered inoperable.

TL0 WEAPONS

Absence of technology does not mean lack of skill or ingenuity but it does limit the materials available. An obsidian spearpoint may be just as well-crafted and sharp as one made of bronze or iron but is more likely to shatter on a bad throw. For all weapons introduced at TL0, any attack roll with Effect -3 or worse will cause it to break. For a bow, this means the bow or string, not the arrow (which at any TL is unrecoverable on any non-odd Effect (+2, 0, -2, etc.). The same weapons crafted at TL1 or above do not suffer this defect.

BLUDGEONING WEAPONS

All weapons described in this section require the Melee (bludgeon) skill to use effectively.

ANTI-ARMOUR FLAIL

This weapon has a short shaft on which is mounted a chain with an attached explosive warhead. When swung, the warhead detaches, adheres to the target with instant glue, then detonates after a pre-set delay (between 1 and 12 rounds).

CLUB

The first weapon emerging sophonts usually discover. Clubs can range from a length of heavy wood to extending riot batons of advanced polymers but they remain a popular and practical weapon regardless.

GRAVITY HAMMER

The basic concept of the gravity hammer's use (smash stuff) hides a truly sophisticated weapon that has become known as the epitome of bludgeoning weaponry. Inside the super-dense head of the hammer is a small gravitic generator that twists and multiplies the effective kinetic force the weapon creates when swung. The slight gyroscopic pull of the gravity hammer does make it difficult to control mid-swing, creating an additional amount of weight to compensate for. When using the gravity hammer against any target smaller than a vehicle, attack rolls suffer DM-6.

MACE

A mace is a one-handed weapon sometimes carried as a sidearm by low-technology troops. It consists of a heavy crushing head on a short haft.

SAP

Consisting of a fabric bag containing a heavy weight, such as lead shot, the sap is intended to knock an opponent unconscious rather than kill. However, it requires a degree of stealth as the sap loses the Stun trait if the target is aware of the attacker.

SLEDGEHAMMER

In primitive cultures, this weapon may be called a heavy mace but it effectively remains a heavy lump of metal atop a long shaft that can utterly destroy almost anything it is swung against.

IMPROVISED WEAPONS

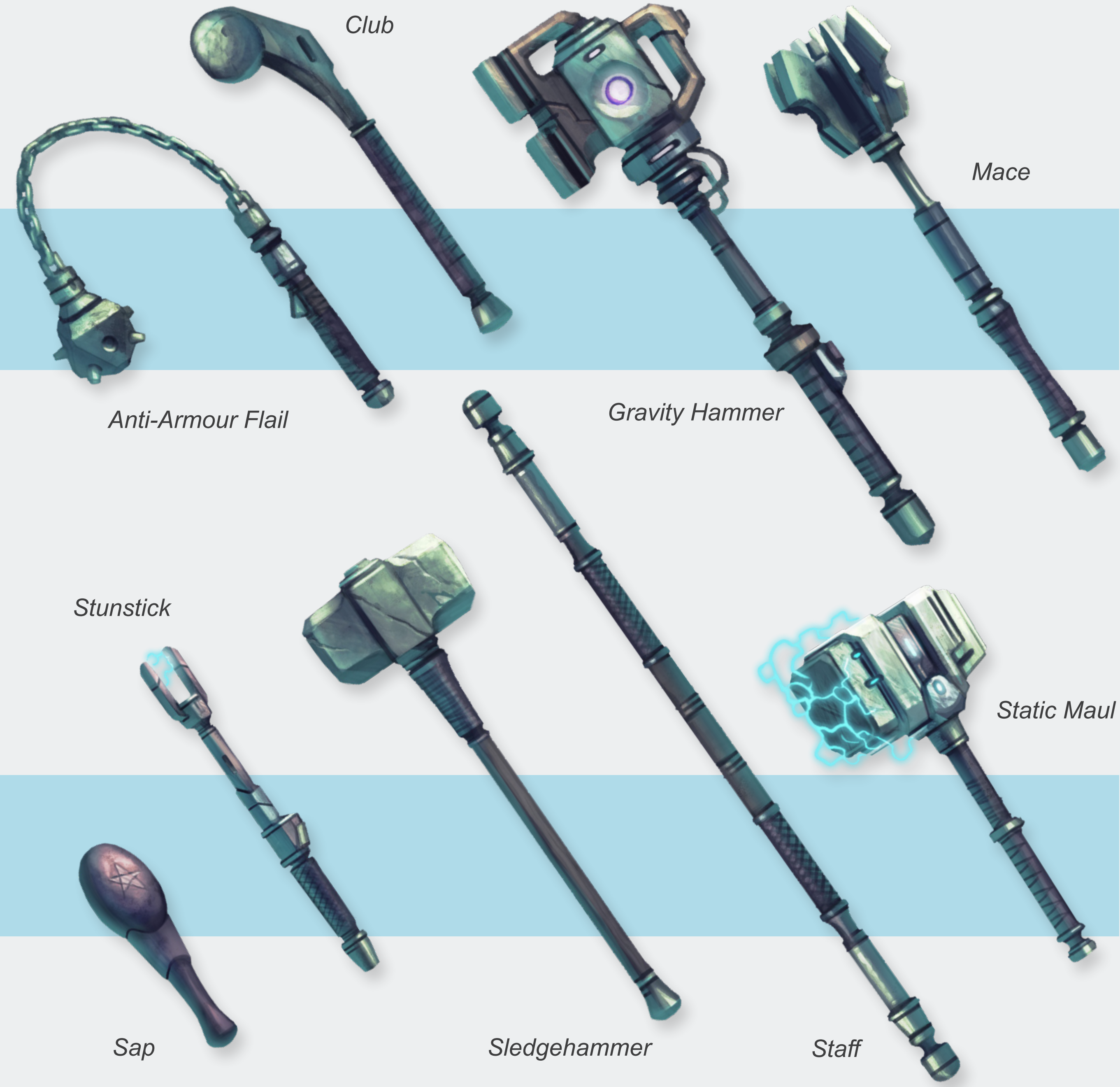
Improvised weapons attack as whatever weapon they are most similar to (such as a dagger, club or garrotte) except the user suffers DM-1 to attack rolls and -1 to each damage dice. At any Tech Level, an improvised weapon becomes unusable after any attack roll with Effect -3 or less.

FINELY MADE WEAPONS

A Traveller may not be satisfied with the quality of mass-produced weapons. Superior workmanship can produce enhanced designs but these products are hard to come by and are only available at a considerable premium. These weapons could be either limited run and/or premium commercial models, or custom versions built by a highly skilled weaponsmith.

A Referee may choose to allow the purchase of finely made weapons and set an Availability DM. A finely made weapon can have one of the following advantages:
- **Accurate:** This weapon provides DM+1 to attack rolls.
- **Deadly:** When determining damage from this weapon all dice which roll a 1 or 2 are treated as a 3.
- **Long Range:** The Range of this weapon is increased by 50%.

Each of these advantages increases the cost of the weapon by 2D3 times standard costs. The Referee may allow weapons with more than one advantage but the cost for each additional feature is multiplied by the others. For example, the Referee may allow a Traveller to search for and purchase a three-premium-feature 'unicorn gun' but on average this weapon will cost 64 times standard price and will almost certainly be a custom model with limited availability of spare parts.


Club
Mace
Anti-Armour Flail
Gravity Hammer
Stunstick
Static Maul
Sap
Sledgehammer
Staff

WEAPON	TL	RANGE	DAMAGE	KG	COST	TRAITS
Anti-Armour Flail	8	Melee	4D	3	Cr250	AP 5, One Use
Club	0	Melee	2D	2	Cr-	—
Gravity Hammer	13	Melee	5D	5	Cr10000	AP 50, Bulky, Smasher
Mace	1	Melee	2D+2	3	Cr20	Bulky, Smasher
Sap	1	Melee	1D	1	Cr30	Stun
Sledgehammer	1	Melee	4D	8	Cr30	Smasher, Very Bulky
Staff	1	Melee	2D	2	Cr5	—
Static Maul	11	Melee	3D	3	Cr650	AP 4, Bulky, Smasher
Stunstick	8	Melee	2D	0.5	Cr300	Stun

STAFF
Typically, a makeshift peasant's weapon but more well-balanced than a club, the staff remains easily accessible to the lowest serf and yet effective in skilled hands. A staff used two-handed by a wielder with Melee skill also serves as shield for parrying purposes.

STATIC MAUL
This is a sophisticated weapon that generates a localised static field capable of weakening molecular bonds upon impact. It is effective against armoured targets although still requires brute strength to cause crippling damage.

STUNSTICK
A short and innocuous looking weapon, this ceramic stick can deliver a painful and debilitating shock to anyone who touches the wrong end.

BLADE WEAPONS
All weapons described in this section require the Melee (blade) skill to use effectively.

ARC-FIELD WEAPON
This is a highly advanced weapon that does not actually have a blade at all; arc-field weapons have dense, conductive fibres that are flooded with energy from a self-contained power pack when activated. The result is a plane of energy that can slice through nearly anything. Arc-field weapons cannot be parried by any weapon of a lower Tech Level. When available, these weapons are categorised and restricted as energy weapons (banned at Law Level 2).

ASSAULT PIKE
Unwieldy when it first appears, the assault pike gets lighter and more manageable at higher Tech Levels. It is little more than a shaped charge placed on the end of a pole, jammed against an armoured target to detonate the charge. In theory, the long shaft allows the bearer to be sufficiently far away not to be harmed by the explosion.

BATTLE AXE
A large axe with one or two blades and wielded in one or both hands, the battle axe is a basic weapon for low-technology infantry. In modern societies, such weapons are more likely to appear as utilitarian fire axes.

BLADE
A short sword, somewhere between a dagger and a cutlass in length. These blades sometimes feature a large basket hilt.

BROADSWORD
A heavy two-handed sword, capable of doing some serious damage even to a well-armoured, high-technology opponent.

CHAINDRIVE AXE
A small but high torque engine built into the haft of this weapon drives a set of independently spinning, chain-driven teeth in the axe head. These are capable of shredding an enemy with a single blow. The battery-powered chaindrive will operate for 30 minutes of combat or intimidation before requiring a recharge.

CHAINDRIVE SWORD
A small but high torque engine built into the hilt of this weapon drives a paired row of sawing teeth, creating the blade of the weapon. A truly vicious weapon, it is used by those who like to intimidate. The battery-powered chaindrive will operate for 30 minutes of combat or intimidation before requiring a recharge.

CUTLASS
A sword with a single-edged curved blade, this is the standard shipboard blade weapon, often kept near airlocks to repel boarders.

DAGGER
A small knife, approximately 20–30 centimetres in length.

GREAT AXE
A very large axe with a long haft, wielded in both hands, the great axe is a fearsome low-technology infantry weapon although limited in close quarters fighting. Nonetheless, it is capable of smashing through even modern armour. Large logging axes have a similar performance.

HATCHET
A light axe head on a short haft, hatchets are basic work tools and carried as sidearms in some systems. They are also found in survival and field kits.

LANCE
The classic weapon of an ancient knight, the lance is a long polearm designed to be used from horseback. If it is not being wielded from the back of a fast-moving animal or vehicle, it is treated as a spear (see page 137).

LONG BLADE

This includes most long-bladed hilt weapons, from the European ‘knightly’ long sword to the Japanese katana. Most such swords are primarily used in one hand but can be wielded two-handed at need.

MONOBLADE

This is a light one-handed polymer blade that features a monofilament edge, a cutting edge just a few nanometres thick created by spinning a single-molecule strand. A monoblade is as sharp as any physical object can be.

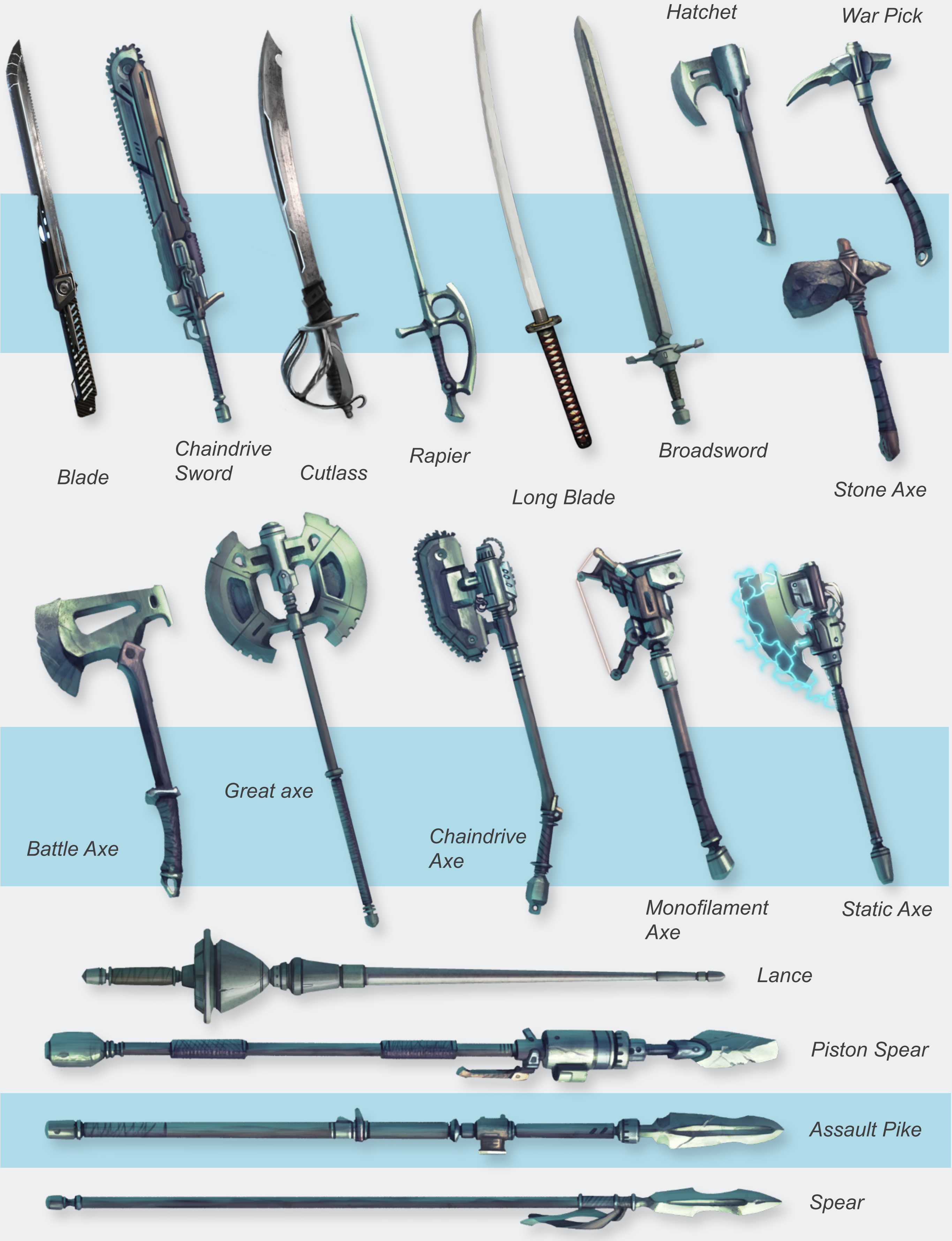
MONOFILAMENT AXE

Originally designed as a rescue tool capable of cutting through crystaliron, the monofilament axe found a niche in cutting through combat amour, making it an effective close combat tool.

PISTON SPEAR

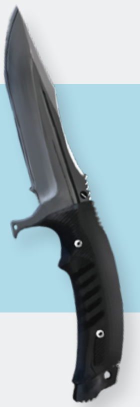
The reinforced shaft of this spear contains a compressed air chamber that drives a pneumatic engine. When activated, the spear tip is driven forward under great pressure to punch through the enemy. It requires a Minor Action to reset the spear tip after each attack. If this is not done, the weapon is treated as a normal spear (see page 137).

WEAPON	TL	RANGE	DAMAGE	KG	COST	TRAITS
Arc-Field Weapon	14	Melee	5D+2	4	Cr25000	AP 30
Assault Pike	5	Melee	4D	8	Cr200	AP 4, Bulky, One Use
	8	Melee	4D	5	Cr400	AP 4, One Use
Battle Axe	1	Melee	3D	4	Cr225	AP 2, Bulky
Blade	1	Melee	2D	1	Cr100	—
Broadsword	1	Melee	4D	3	Cr500	Bulky
Chaindrive Axe	10	Melee	4D	6	Cr600	AP 4, Bulky
Chaindrive Sword	10	Melee	4D	4	Cr500	AP 2
Cutlass	2	Melee	3D	2	Cr200	—
Dagger	1	Melee	1D+2	0.5	Cr10	—
Great Axe	1	Melee	4D+2	8	Cr750	Smasher, Very Bulky
Hatchet	1	Melee	2D+2	2	Cr50	—
Lance	1	Melee	5D	4	Cr250	AP 4
Long Blade	1	Melee	3D	2	Cr200	—
	3	Melee	3D+2	2	Cr300	—
Monoblade	12	Melee	3D	1	Cr2500	AP 10
Monofilament Axe	12	Melee	4D	4	Cr3000	AP 15, Bulky, Smasher
Piston Spear	7	Melee	3D+2	3	Cr400	AP 2
Psi Blade	16	Melee	2D	1	Cr30000	Special (PSI)
Psi Dagger	16	Melee	1D+2	0.5	Cr25000	Special (PSI)
Rapier	2	Melee	2D	1	Cr200	—
Spear	0	Melee	2D	2	Cr10	—
Static Axe	11	Melee	4D	5	Cr750	AP 6, Bulky, Smasher
	12	Melee	4D+2	4	Cr1000	AP 8, Smasher
Static Blade	11	Melee	3D	3	Cr700	AP 5
	12	Melee	3D+2	2	Cr900	AP 6
Stealth Dagger	8	Melee	1D+2	0.5	Cr175	—
Stone Axe	0	Melee	2D+1	2	Cr5	—
War Pick	1	Melee	2D+2	3	Cr275	AP 4

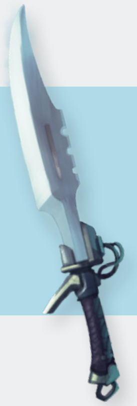

Hatchet
War Pick
Blade
Chaindrive Sword
Cutlass
Rapier
Long Blade
Broadsword
Stone Axe
Great axe
Battle Axe
Chaindrive Axe
Monofilament Axe
Static Axe
Lance
Piston Spear
Assault Pike
Spear

PSI BLADE

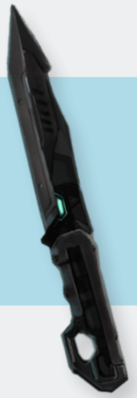
Used by melee-oriented psions, the psi blade incorporates a tightly knit web of complex filaments that conduct psionic energy into the semi-crystalline blade. The psi blade adds the wielder's PSI DM to the damage it inflicts, as well as their STR DM. It will also have an AP score equal to five times the PSI DM. Additional PSI points may be spent upon a successful attack to increase the damage and AP further. Each point of PSI expended in this way increases the damage by +1 and AP by +5.



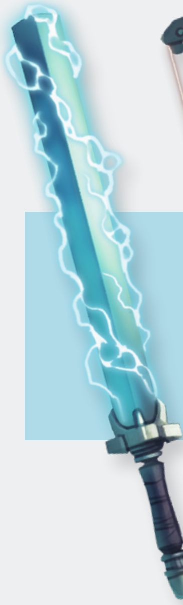
Dagger



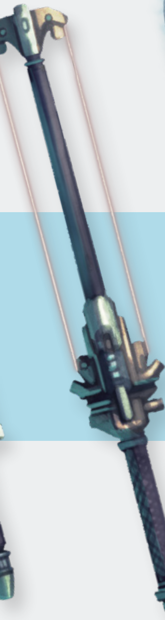
Psi-Dagger



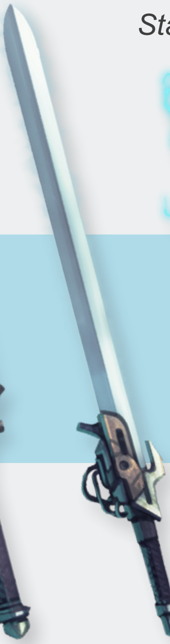
Stealth Dagger



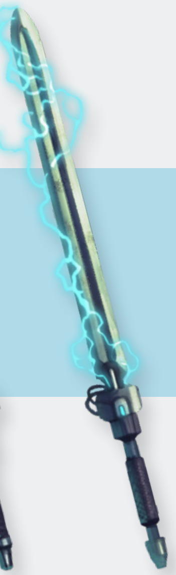
Arc-Field Weapon



Monoblade



Psi-Blade



Static Blade

PSI DAGGER

The psi dagger uses filaments conducting psionic energy to channel the raw power of a psion into their attacks. The psi dagger adds the wielder's PSI DM to the damage it inflicts, as well as their STR DM. Additional PSI points may be spent upon a successful attack to increase the damage further. Each point of PSI expended in this way increases the damage by +1.

RAPIER

A duelling foil, often seen as the sword of a noble. Rapiers grant DM+1 when parrying.

SPEAR

A polearm with a pointed tip, usually of metal, a spear can be made from something as basic as a sharpened stick with a fire-hardened end. More advanced versions are based on the same in principle but may have a more durable head, crosspieces to prevent an impaled animal advancing up the shaft and so forth.

STATIC AXE

This is an axe-bladed weapon enhanced by a powerful generator that emits a localised static energy field, weakening molecular bonds as it cleaves into a target. The battery-powered generator will operate for 30 minutes of combat or cutting.

STATIC BLADE

This blade is enhanced by a powerful generator that emits a localised static energy field, weakening the molecular bonds of the target. The battery-powered generator will operate for 30 minutes of combat or cutting.

STEALTH DAGGER

Also called the invisiknife, this weapon is made from low-density plastic and very hard to detect using standard weapons scanners. Electronics (sensors) checks made to detect this weapon suffer DM-4. This check is subject to TL differential rules but more advanced versions of the stealth dagger are available up to TL12. Stealth daggers are usually banned at Law Level 1 and above.

STONE AXE

A simple weapon constructed by attaching a weight (usually a sharpened rock) to a branch or bone handle.

WAR PICK

War picks are specifically designed to punch through armour and remain reasonably effective against even modern protection.

UP CLOSE AND PERSONAL WEAPONS

All weapons described in this section require the Melee (unarmed) skill to use effectively. A human striking with bare fists or feet inflicts 1D with a melee attack.

BRASS KNUCKLES

A heavy knuckleduster (which may or may not be made of actual brass), brass knuckles add inertia to a punch, as well as protecting the fist. Heavy boots or specially modified shoes with hard striking surfaces can also function in the same way.

CLAW GLOVE

A heavy glove with retractable claws, this item was developed to counter augmented Aslan dewclaws and to support lethal pit-fighting in seedier human and Vargr communities, although versions are available for nearly any species with hands. Most worlds ban such activities – and the gloves, which are considered personal concealable weapons.

GARROTTE

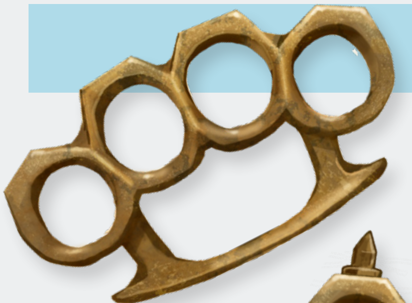
A piece of cord or wire, sometimes with handles to make it easier to apply force. A garrotte can only be used upon an opponent who has been successfully grappled (see the *Traveller Core Rulebook*, page 78). If a successful grapple leads to an enemy suffering damage, the garrotte will inflict 2D damage, plus the Effect of the opposed Melee check. Every consecutive round in which a garrotte is successfully used will add an additional 1D to the damage caused.

HANDSPIKES

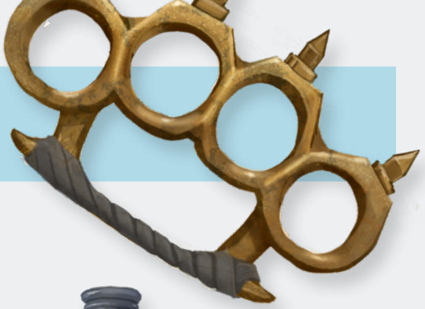
Essentially a heavy knuckleduster with spikes that penetrate rather than just relying on simple impact, handspikes are intimidating and leave a very nasty wound. Versions implemented in boots are also available.

KNUCKLEBLASTERS

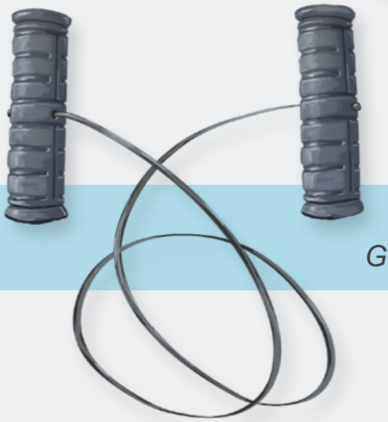
A truly vicious weapon, the knuckleblasters take the form of a reinforced glove with heavily padded fingers that incorporate a row of sockets across the back of the hand. These sockets are loaded individually with four shotgun shells which detonate when the wielder's fist comes into hard contact with a target, causing a devastating amount of damage. After a successful attack, the knuckleblasters must be reloaded, a process requiring two Significant Actions.



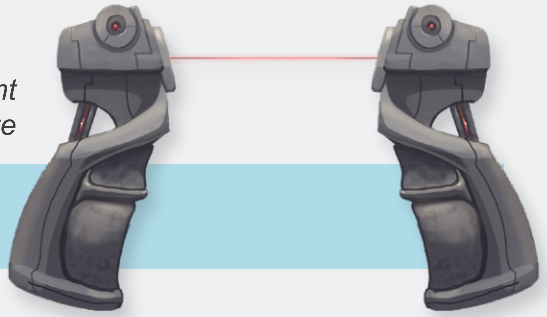
Brass Knuckles



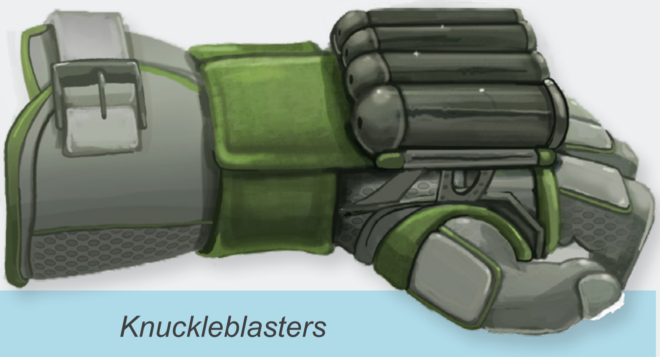
Handspikes



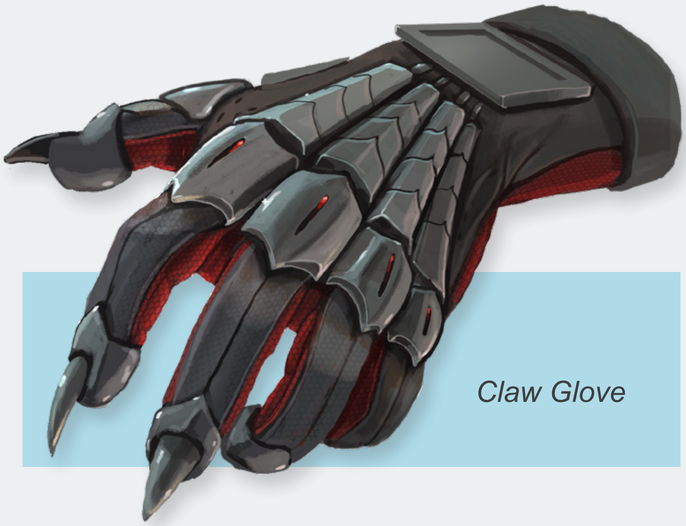
Garrotte



Monofilament Garotte



Knuckleblasters



Claw Glove

MONOFILAMENT GARROTTE

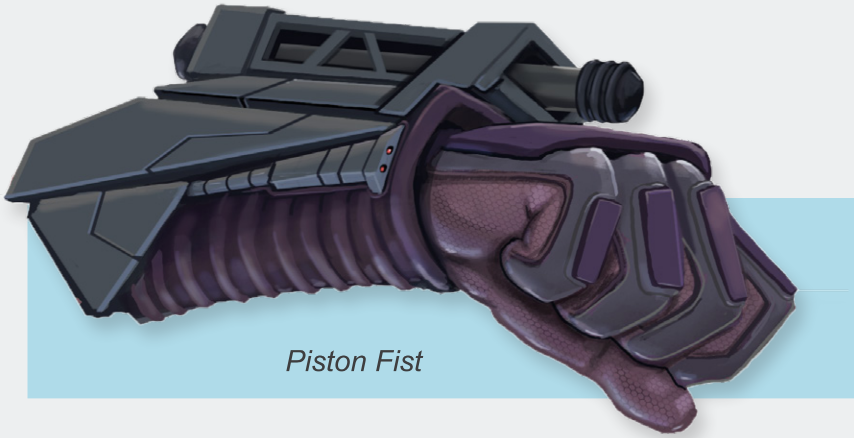
A piece of monofilament wire which spools from two handles. It attacks as a standard garrotte but causes 3D damage on consecutive rounds, often decapitating the victim. Mishaps can cause harm to the wielder, accidently severing a hand or worse.

PISTON FIST

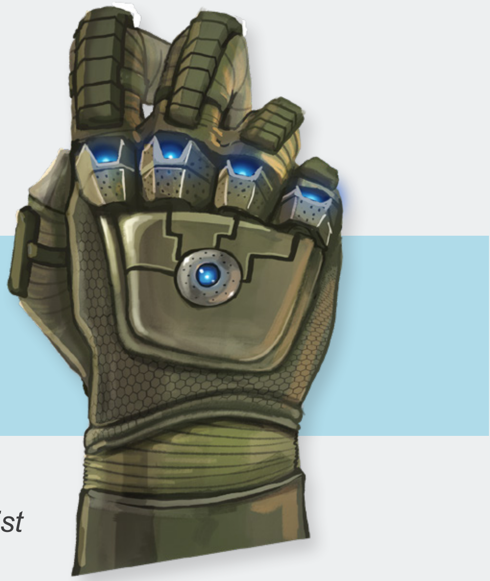
This heavy metal forearm brace has a built-in pneumatic ram that activates whenever the wielder makes a quick punching motion. Driven forward under great pressure, it has the potential to punch through solid walls. The wielder's STR DM is never added to the damage caused by this weapon.

STUNFIST

A stunfist is a high-technology knuckleduster containing a shock unit (along with insulation for the wearer) that incapacitates the victim rather than pummels them.



Piston Fist



Stunfist

WEAPON	TL	RANGE	DAMAGE	KG	COST	TRAITS
Brass Knuckles	1	Melee	1D+2	—	Cr10	—
Claw Glove (hardened)	10	Melee	1D+2	—	Cr1000	AP 2
Claw Glove (edging)	11	Melee	2D+2	—	Cr3000	AP 4
Claw Glove (monofilament)	12	Melee	3D	—	Cr5000	AP 10
Claw Glove (arc-field)	14	Melee	4D	—	Cr25000	AP 30
Garrotte	0	Melee	2D	—	Cr10	—
Handspikes	2	Melee	2D	—	Cr100	—
Knuckleblasters	8	Melee	5D	0.5	Cr150	—
Monofilament Garrotte	12	Melee	3D	—	Cr1000	AP 10, Dangerous
Piston Fist	9	Melee	3D+2	0.5	Cr150	—
Stunfist	8	Melee	1D+2	—	Cr250	Stun

SHIELDS

A Traveller using a standard shield increases their effective Melee skill by +1 when parrying. A Traveller with no Melee skill counts as having Melee 0 when using a shield to parry. If used as a weapon instead, they require the Melee (bludgeon) skill.

BOARDING SHIELD

Used by shipboard security personnel and law enforcement special-response teams, the boarding shield is a large movable obstacle. It cannot be used to parry but instead provides the wielder with cover (Protection +8, see page 77 of the *Traveller Core Rulebook* for the effects of cover). Most boarding shields have a vision slit or firing port in the front surface. A boarding shield completely protects anyone hiding behind it and is large enough for two people to benefit from it simultaneously or to move it forward while remaining covered.

BUCKLER

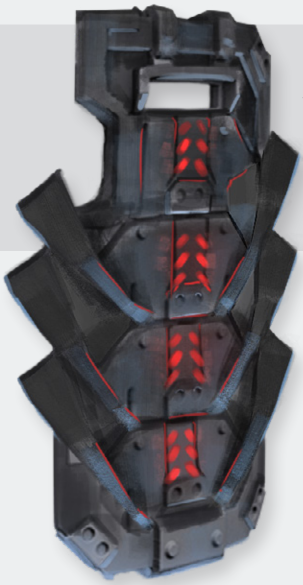
A small wood and metal shield held in the hand and used to parry incoming blows. A buckler requires skill to use effectively. It acts as a shield but does not grant an effective Melee 0 if the wielder has no skill in Melee to begin with.

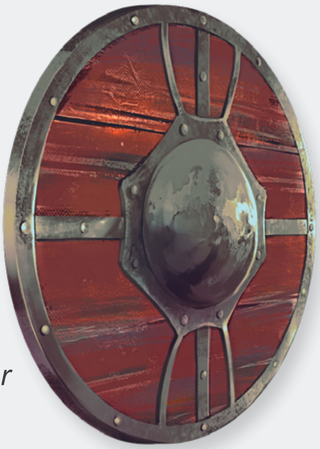
EXPANDABLE SHIELD

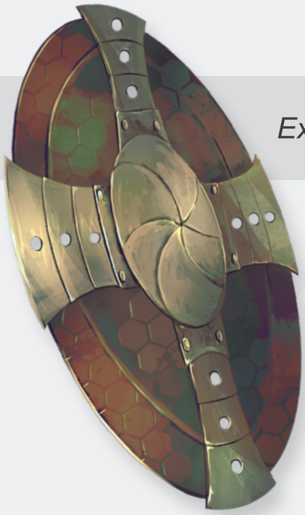
An expandable shield deploys from a bracer on the wearer's forearm. Using morphable materials, it expands on voice or electronic command to become any size from a buckler to a boarding shield, providing Protection +8 as cover but it is lightweight enough to not be considered bulky in that role.

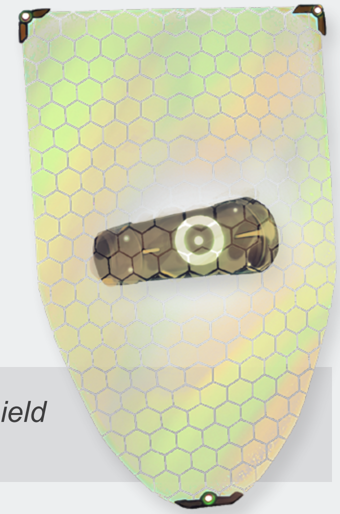
GRAVITIC SHIELD

Worn as an armband or bracer, when activated the gravitic shield projects a flat, shimmering energy field that deflects incoming attacks and functions in the same way as a normal shield.


Boarding Shield


Buckler


Expandable Shield


Gravitic Shield

WEAPON	TL	RANGE	DAMAGE	KG	COST	TRAITS
Boarding Shield	9	Melee	1D	5	Cr1500	Bulky
Buckler	1	Melee	1D	1	Cr10	—
Expandable Shield	12	Melee	1D	1	Cr2500	—
Gravitic Shield	17	Melee	1D	—	Cr2500	—
Large Shield	1	Melee	—	5	Cr200	—
Riot Shield	6	Melee	1D	1.5	Cr175	—
Shield	0	Melee	1D	2	Cr150	—

LARGE SHIELD

A large shield is normally hung on a strap from the shoulder to help bear its weight and cannot be used as a weapon. So long as the wielder has STR 9+, the large shield increases their effective Melee skill by +2 when parrying and a wielder with no Melee skill counts as having Melee 1 when using a large shield to parry. However, if the wielder does not have the required STR, it simply counts as a shield.

RIOT SHIELD

A round or rectangular shield of fireproof plastic, which may be clear or opaque, a riot shield is the modern version of a shield but is lighter and also grants Protection +1 against ranged attacks. It also makes the Traveller immune to the Fire trait from weapons that make attacks from the front.

SHIELD

Various types of medium-sized shields exist, round shields, kite shields and so forth.

SPECIALISED MELEE WEAPONS

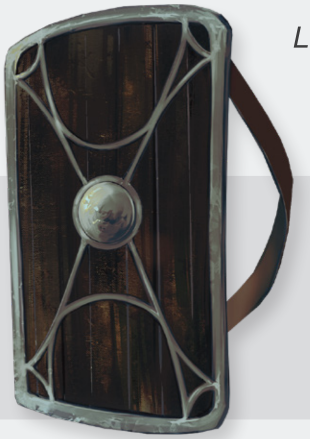
Weapons described in this section require the Melee skill to use effectively, although each requires its own speciality. In these cases, Melee (whip).

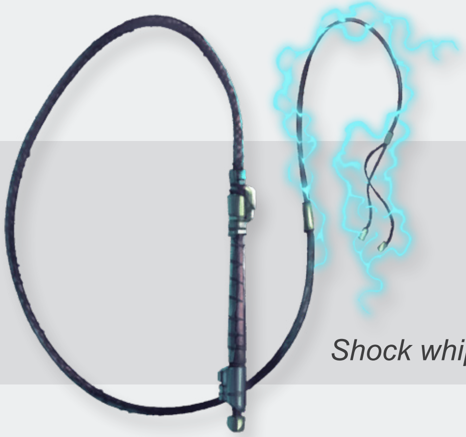
SHOCK WHIP

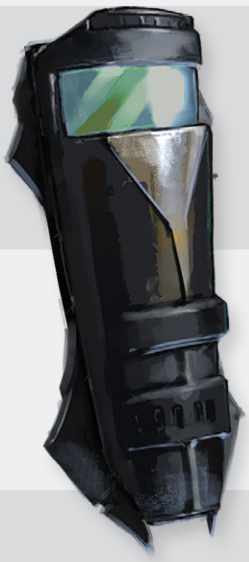
A shock whip is more an instrument of torture than a useful weapon. It is normally used on a low setting to inflict pain from both the whip's own action and accompanying shock effect but the charge can be increased to make it an effective, if unusual, weapon. Use of a shock whip grants DM+1 to Intimidate and Persuade checks made while questioning (torturing) a Traveller.

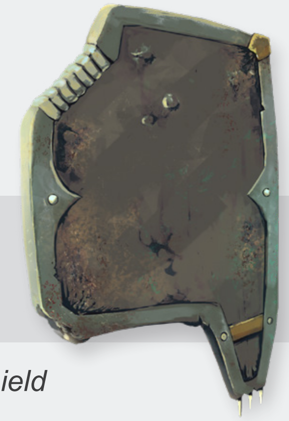
WHIP

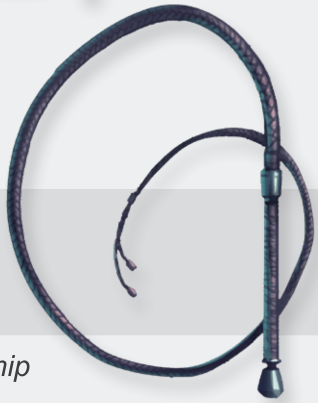
This is a long whip that takes some practice and skill to use effectively. It may be used either to inflict damage or entangle an opponent at a distance of up to five metres. If the latter is desired, a successful attack will inflict no damage but instead force an immediate grapple (see page 78 of the *Traveller Core Rulebook*) between the attacker and target.


Large Shield


Shock whip


Riot Shield


Shield


Whip

WEAPON	TL	RANGE	DAMAGE	KG	COST	TRAITS
Shock Whip	9	Melee	2D	1	Cr450	Stun
Whip	1	Melee	D3	1	Cr15	—

SLUG THROWERS

Despite advances in energy weapons and other offensive technologies, accelerating a small piece of metal to high velocity is still one of the most efficient ways of killing someone. Chemically propelled firearms give way to gyrojet (rocket bullets) and gauss (electromagnetically launched bullets) as technology advances.

SLUG PISTOLS

All weapons described in this section require the Gun Combat (slug) skill to use effectively.

ANTIQUE PISTOL

A flintlock or other primitive projectile weapon. Unless the weapon is especially well made, it will suffer DM-1 to all attacks. Antique pistols require a successful Gun Combat (slug) check to reload, taking 2D3 Minor Actions.

ASSAULT PISTOL

An autopistol designed to fire bursts of fully-automatic fire, assault pistols are notoriously inaccurate and suffer DM-2 to all attack rolls when using burst or full auto modes. Users are advised to carry as many extra magazines as they can as the assault pistol burns ammunition very quickly.

AUTOPISTOL

Variants of this semi-automatic pistol are the standard sidearm for law enforcement officers and criminals across the Imperium.

BODY PISTOL

Body pistols are manufactured from plastics and cultured bone, making them very difficult to detect using conventional weapons scanners. Body pistols impose DM-4 to any Electronics (sensors) checks made to detect them. This check is subject to TL differential rules but more advanced versions of the body pistol are available up to TL12.

CARTRIDGE PISTOL

A large smoothbore revolver chambered for a non-standard 13mm light shotgun cartridge, this weapon is often used to deal with vermin but has some combat applications.

COACH PISTOL

Essentially a sawed-off double-barrelled black powder shotgun, the coach pistol is deadly at close range but useless at any real distance. Both barrels can be discharged at once, in which case the damage is increased to 4D. Coach pistols require a successful Gun Combat (slug) check as a Significant Action to reload.

AMMUNITION MASS

To lower the record-keeping burden of Travellers, the mass of ammunition for weapons is generally not considered. However, there are times when this value becomes important, such as when transporting large loads of ammunition to resupply a beleaguered outpost or when a Traveller begins to insist that carrying an extra 100 magazines of assault rifle ammunition or 10 laser rifle power packs is 'not a problem'. To manage these situations, the following rules of thumb can substitute for formal rules on the mass of every single type of ammunition:

- Assume a magazine of 20 rounds of ammunition equals 10% of the mass of the weapon; extrapolate as necessary.
- Assume a power pack to an energy weapon equals 60% of the mass of the weapon if the power pack is external or 20% if internal.
- If a weapon has no listed mass, assume it is 0.2 kilograms for calculating ammunition or power pack mass.

These guidelines will not cover every variation of weapon and ammunition but should cover most situations.

DUCK'S FOOT PISTOL

A good tool for intimidating an entire mob at once, the duck's foot pistol has several (normally between four and eight) splayed barrels which are all discharged at once. Its effects can be fairly random and the energy expended has been known to wreck the pistol. The Duck's foot pistol can only ever be used on full auto (see *Traveller Core Rulebook*, page 79) and a target may only be attacked once – any extra shots are wasted. This weapon requires a successful Gun Combat (slug) check to reload, taking 2D3 Minor Actions.

FLECHETTE PISTOL

This pistol is designed to be an efficient and silent weapon for use by those who do not wish to bring attention to themselves. It uses compressed air to launch a cluster of metal darts.

Assault Pistol

Antique Pistol

Autopistol

Body Pistol

Cartridge Pistol

Coach Pistol

Duck's Foot Pistol

Flechette Pistol

Gauss Pistol

WEAPON	TL	RANGE	DAMAGE	KG	COST	MAGAZINE	MAGAZINE COST	TRAITS
Antique Pistol	2	5	2D-3	0.5	Cr100	1	Cr5	—
Assault Pistol	6	10	3D-3	1	Cr250	15	Cr10	Auto 2
Autopistol	5	10	3D-3	1	Cr200	15	Cr10	—
Body Pistol	8	5	2D	—	Cr500	6	Cr10	—
Cartridge Pistol	7	10	4D	1.5	Cr300	6	Cr10	Bulky
Coach Pistol	3	5	4D-3	2	Cr200	2	Cr10	Dangerous
Duck's Foot Pistol	3	5	3D-3	2	Cr300	4–8	Cr25	Auto 4, Dangerous
Flechette Pistol	9	10	3D-2	1	Cr275	2	Cr10	Silent
Gauss Pistol	13	20	3D	1	Cr500	40	Cr20	AP 3, Auto 2
Heavy Revolver	5	10	4D-3	1.5	Cr400	6	Cr15	Bulky
Magrail Pistol	14	15	3D+3	1	Cr750	20	Cr60	Auto 4
Revolver	4	10	3D-3	0.5	Cr150	6	Cr5	—
Shot Pistol	5	2	3D	0.5	Cr60	1	Cr5	—
Snub Pistol	8	5	3D-3	—	Cr150	6	Cr10	Zero-G
Universal Autopistol	8	10	3D-3	1	Cr300	10	Cr10	—
Zip Gun	3	5	2D-3	—	Cr50	1	Cr5	Dangerous

GAUSS PISTOL

Gauss pistols use electromagnetic coils to accelerate metallic darts to hypersonic speeds. Gauss weapons are lightweight, efficient and deadly.

HEAVY REVOLVER

A more robust and solidly built version of the standard revolver, a heavy revolver fires a long (Magnum) 10mm or even 12mm cartridge.

MAGRAIL PISTOL

Using similar technology to gauss weapons, magrail pistols throw ovoid projectiles (sometimes erroneously called discs or shuriken) which hit hard at short ranges but lack penetrative power.

REVOLVER

A conventional six-shooter handgun.

SHOT PISTOL

This is a single shot, break-open smoothbore handgun designed to fire non-standard low-powered 14mm cartridges, intended to deal with snakes and similar vermin in the wilderness. It is virtually useless beyond a few metres.

SNUB PISTOL

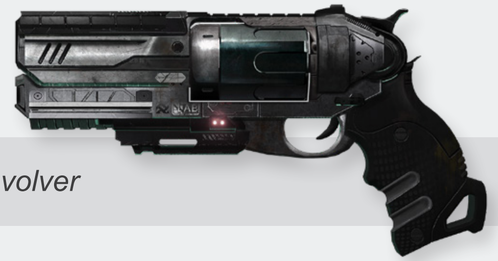
These lightweight, low-recoil weapons fire rocket-propelled rounds and were designed for use aboard spacecraft and in zero gravity.

UNIVERSAL AUTOPISTOL

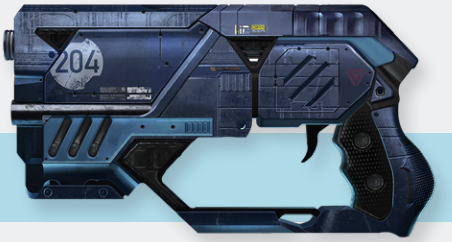
This is a small-calibre semi-automatic handgun designed to be used by a variety of alien hands and appendages, enabling armed forces to issue a standard sidearm to non-human personnel. The weapon is also known as a staple gun because of its shape and modest effectiveness.

ZIP GUN

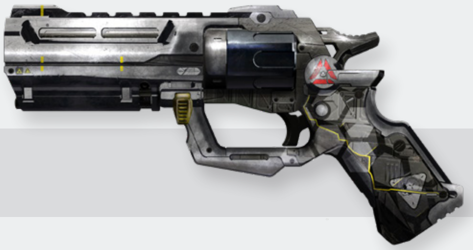
A Zip Gun is a one-shot weapon cobbled together from whatever materials are available. They are, by definition, unique. Zip guns suffer DM-1 to their attack rolls.



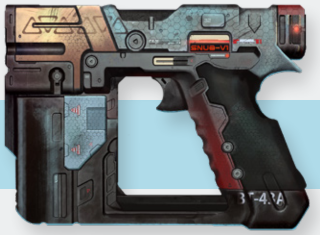
Heavy Revolver



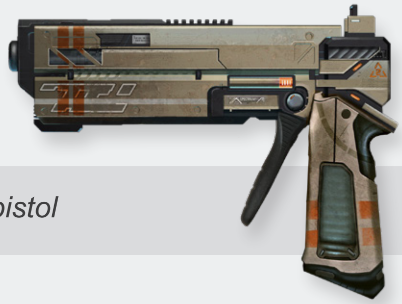
Magrail Pistol



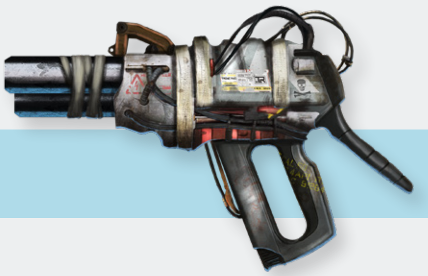
Revolver



Snub Pistol



Universal Autopistol



Zip Gun

SLUG RIFLES

All weapons described in this section require the Gun Combat (slug) skill to use effectively.

ACCELERATOR RIFLE

Also known as gyrojet weapons, accelerator rifles are designed for zero-gravity combat. They fire tiny missiles that leave the rifle with minimal velocity and thus minimal recoil, then accelerate to high speed. The TL11 version has greater range and is sometimes equipped with guided rounds capable of multiple burns and firing around corners.

ADVANCED COMBAT RIFLE

The ultimate evolution of the conventional firearm, advanced combat rifles are the weapon of choice for many military units. Standard equipment includes an electronic battlefield sight, incorporating both light amplification and passive IR, visual magnification and a laser rangefinder which may also be used as a target painting device. The weapon is also gyroscopically stabilised during firing. A sling is provided and the muzzle of the rifle includes an integral flash suppressor and adaptor for launching a 40mm RAM shoot-through grenade (see Auxiliary Grenade Launcher on page 174).

WEAPON	TL	RANGE	DAMAGE	KG	COST	MAGAZINE	MAGAZINE COST	TRAITS
Accelerator Rifle	9	250	3D	2	Cr900	15	Cr30	Zero-G
	11	400	3D	2	Cr1500	20	Cr40	Zero-G
Advanced Combat Rifle	10	450	3D	3	Cr1000	40	Cr15	Auto 3, Scope
Air Rifle	3	50	2D	3	Cr225	1	Cr1	Silent
	4	75	3D-2	3	Cr350	1	Cr1	Silent
Antique Rifle	2	25	3D-3	3	Cr150	1	Cr10	—
Assault Rifle	7	200	3D	4	Cr500	30	Cr15	Auto 2
Assault Shotgun	6	50	4D	5	Cr500	24	40	Auto 2, Bulky
Autorifle	6	300	3D	5	Cr750	20	Cr10	Auto 2
Big Game Rifle	5	200	3D+3	8	Cr1250	5	Cr50	Very Bulky
Flechette Submachine Gun	9	20	3D-2	3	Cr500	40	Cr20	Auto 3, Silent
Gauss Assault Gun	12	20	4D	2	Cr1300	36	Cr35	AP 5, Auto 2
Gauss Rifle	12	600	4D	4	Cr1500	80	Cr80	AP 5, Auto 3, Scope
Gauss Sniper Rifle	12	1000	5D	4	Cr2500	12	Cr20	AP 6, Scope
Gauss Submachinegun	12	50	3D+2	3	Cr1000	60	Cr60	AP 3, Auto 4
Heavy Advanced Combat Rifle	10	450	4D	5	Cr2000	30	Cr20	Auto 2, Bulky, Scope
Magrail Rifle	14	150	4D+3	4	Cr2500	30	Cr100	Auto 6
Rifle	5	250	3D	3	Cr200	5	Cr10	—
Sawed-off Shotgun	4	10	4D	2	Cr200	6	Cr10	Bulky
Shotgun	4	50	4D	4	Cr200	6	Cr10	Bulky
Light Shotgun	4	40	3D	3	Cr150	6	Cr10	—
Sniper Rifle	8	500	3D	5	Cr700	4	Cr10	AP 5, Scope, Silent
Snub Carbine	11	75	3D-3	1	Cr500	20	Cr30	Zero-G
Spear Gun	6	25	3D	2	Cr50	1	Cr10	Silent
Submachine Gun	6	25	3D	3	Cr400	20	Cr10	Auto 3

AIR RIFLE

This is a rifle whose projectile is propelled by compressed air, charged by pumping an internal reservoir to the required pressure. One shot can be fired before the reservoir needs recharging (a process that takes 10 Minor Actions). These are not toys – weapons of this type are designed to kill, although they are generally more useful for hunting or avoiding Law Level restrictions. Not considered firearms, they are often permitted at Law Level 6 or occasionally 7. At TL4, air rifles come with a detachable air cylinder to allow multiple shots (five but the rifle still needs to be reloaded after every shot). These can be refilled for free outside of combat by simply pumping air into them (this can be done manually but takes a few minutes).

ANTIQUE RIFLE

A musket or other primitive rifle. Unless the weapon is especially well made, it will have DM-1 to all attacks. This weapon requires a successful Gun Combat (slug) check to reload, taking 2D3 Minor Actions.

ASSAULT RIFLE

Assault rifles fire lighter projectiles than rifles but are capable of a higher rate of fire and are more suitable to short-range encounters.

ASSAULT SHOTGUN

A heavy shotgun fed from a bulky drum magazine, the assault shotgun is capable of automatic fire. It uses the same ammunition as other shotguns and can lay waste to a wide area.

AUTORIFLE

Automatic rifles have a higher muzzle velocity and are capable of automatic fire. Sometimes called battle rifles.

BIG GAME RIFLE

A bolt-action rifle firing heavy ammunition, this weapon is sometimes named after local wildlife (such as elephant gun). Its recoil is massive but the stopping power is impressive.

FLECHETTE SUBMACHINE GUN

This is a scaled-up version of the flechette pistol capable of full-automatic fire. A longer barrel, ‘assault’ foregrip and folding stock make it more of a combat weapon than an assassination tool and while it lacks stopping power, it sees use in some special operations units.

GAUSS ASSAULT GUN

This short weapon uses gauss technology to accelerate many flechettes, creating a rapid-firing ‘shotgun’ effect. Its small size makes it convenient onboard ships and amongst vehicle crews, yet it retains a powerful short-ranged punch.

GAUSS RIFLE

Gauss rifles replace conventional rifles by TL13. Like the smaller gauss pistol, these rifles fire high-velocity projectiles using electromagnetic coils.

GAUSS SNIPER RIFLE

Utilising gauss technology, this sniper rifle is the ultimate in long-ranged surgical killing using projectiles. The scope includes light amplification and passive IR, visual magnification and a laser rangefinder which may also be used as a target painting device.

GAUSS SUBMACHINEGUN

The gauss submachinegun or gauss personal defence weapon (GPDW) is a short-barrel magnetic coil weapon with an expandable telescopic stock. Designed to be more powerful than a gauss pistol, but small enough to be used by vehicle crews, it is often found in the hands of paramilitaries and less savoury fighters.

HEAVY ADVANCED COMBAT RIFLE

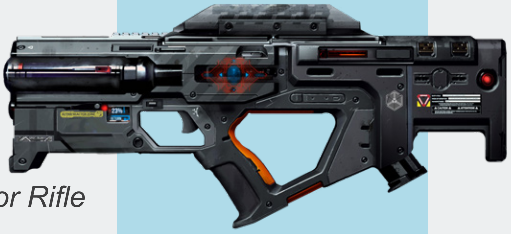
Using larger calibre rounds, the heavy advanced combat rifle is functionally similar to its smaller counterpart and hits harder but has a lower rate of fire and requires a strong user to handle the recoil. Standard equipment includes an electronic battlefield sight, incorporating both light amplification and passive IR, visual magnification and a laser rangefinder which may also be used as a target painting device. The weapon is gyroscopically stabilised during firing but still considered Bulky. A sling is provided and the muzzle of the rifle includes an integral flash suppressor and adaptor for launching a 40mm RAM shoot-through grenade (see Auxiliary Grenade Launcher on page 174).

MAGRAIL RIFLE

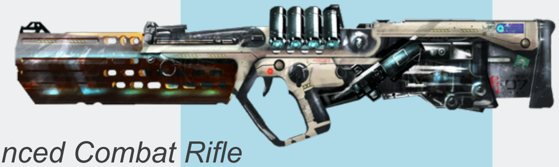
Magrail rifles follow the similar principles of electromagnetic induction to accelerate their projectiles as gauss weapons but utilise an ovoid projectile (sometimes erroneously called a disc or shuriken) which hits hard at short ranges but lacks penetrative power.

RIFLE

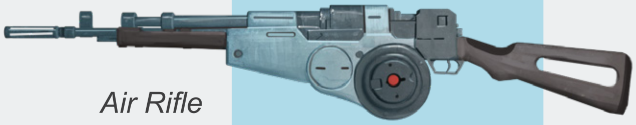
A long-range hunting rifle or light infantry weapon.



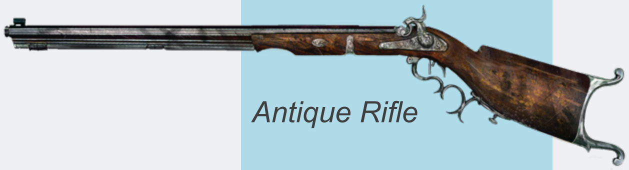
Accelerator Rifle



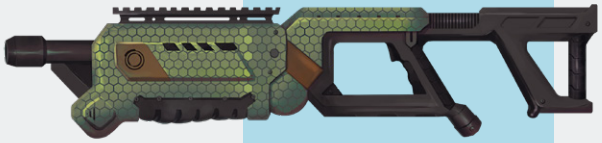
Advanced Combat Rifle



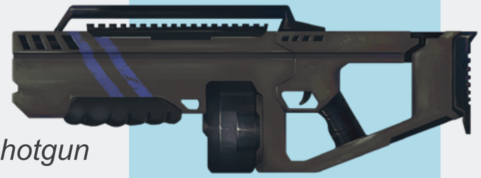
Air Rifle



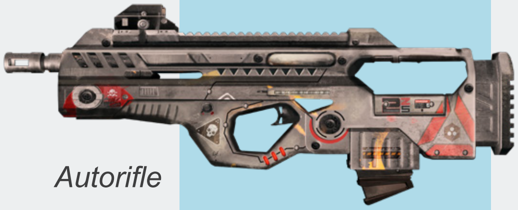
Antique Rifle



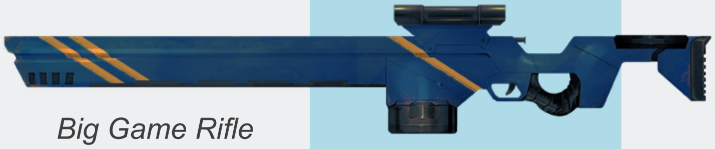
Assault Rifle



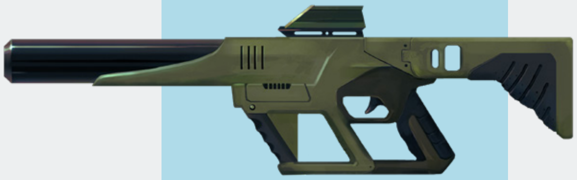
Assault Shotgun



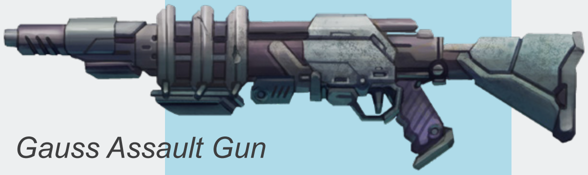
Autorifle



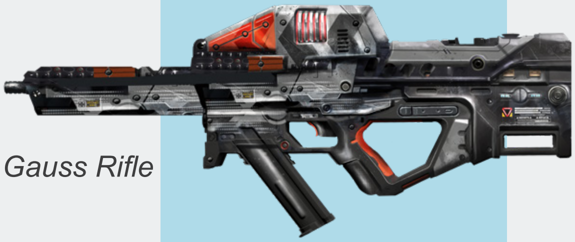
Big Game Rifle



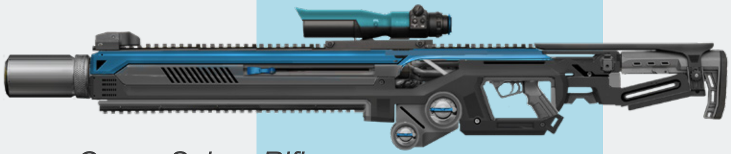
Flechette Submachine Gun



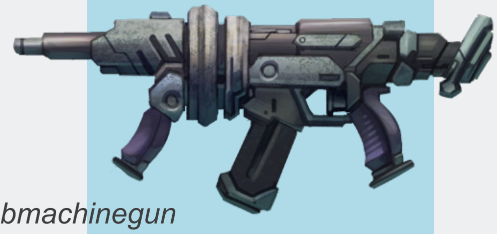
Gauss Assault Gun



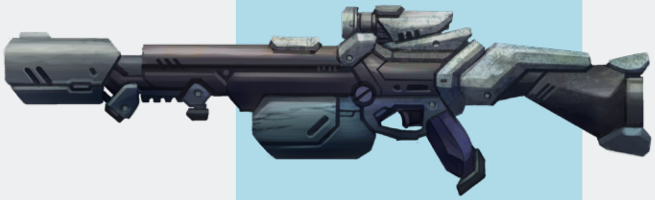
Gauss Rifle



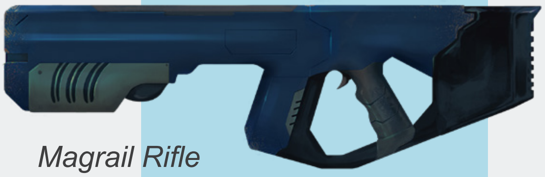
Gauss Sniper Rifle



Gauss Submachinegun



Heavy Advanced Combat Rifle



Magrail Rifle

SAWED-OFF SHOTGUN

Popular more as a threat and it's (comparative) ease of concealment than as a serious combat weapon, a sawed-off shotgun has had its barrels greatly shortened and the stock removed. It has a very short range but the wide spread of shot doubles the attack roll bonus at short range (DM+2). A sawed-off shotgun is treated as a light assault weapon and prohibited at Law Level 4 and above, although conversion from a standard shotgun requires only a saw that will cut through metal.

SHOTGUN

Shotguns are smoothbore weapons that typically fire ammunition containing multiple small pellets. They are most effective at short range. A shotgun using pellet ammunition ignores Dodge dice modifiers but armour gives double protection against pellet attacks and damage beyond listed range is halved. Also available is a light shotgun with lower recoil using smaller gauge shells and intended for small game hunting.

SNIPER RIFLE

This is a high-tech, high-calibre rifle designed for maximum accuracy and penetration. With its integrated silencer and magnification scope, long-distance targets can be killed quietly and efficiently.

SNUB CARBINE

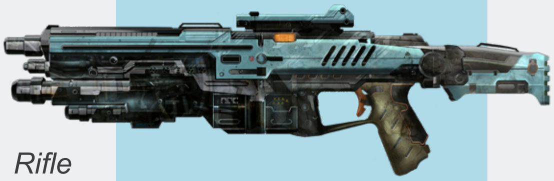
The carbine version of the snub pistol uses the same receiver with a longer barrel and a folding stock. Operation is still semi-automatic and, overall, the weapon is barely more effective than the pistol version, other than possessing a longer effective range.

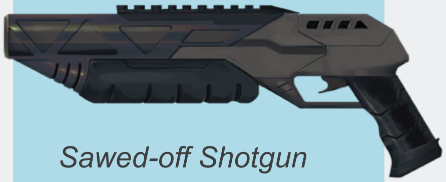
SPEAR GUN

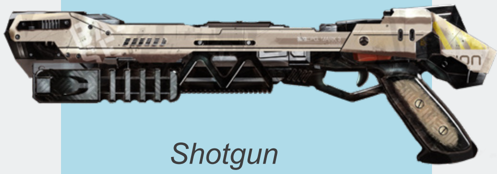
This is a weapon intended for use underwater. Utilising compressed air, it fires a harpoon or spear, which may be attached to the spear gun by a strong line. A Significant Action is required to reload a spear gun after it has been fired.

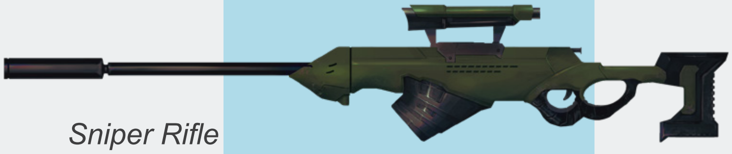
SUBMACHINE GUN

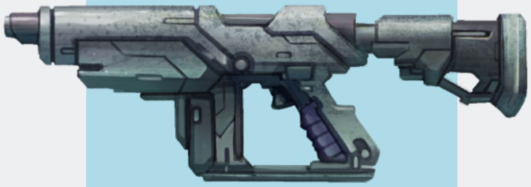
A short weapon capable of automatic fire, it puts the power of an assault rifle into a small package. However, it lacks a rifle's accuracy at range.

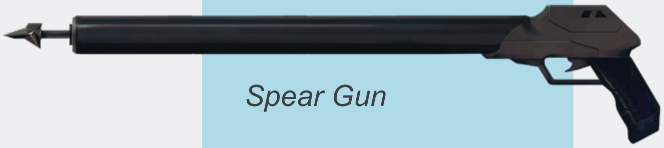

Rifle

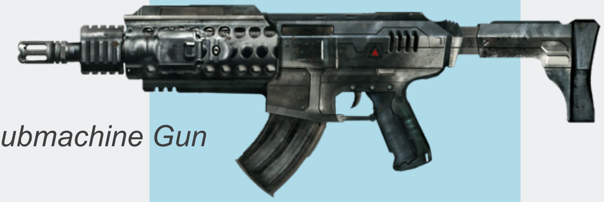

Sawed-off Shotgun


Shotgun


Sniper Rifle


Snub Carbine


Spear Gun

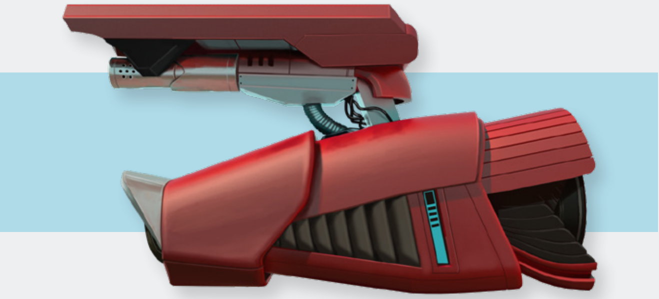

Submachine Gun

ENERGY WEAPONS

Directed-energy weapons first enter the battlefield as target designators and range-finders but by TL9 weapons capable of inflicting damage appear. Laser weapons require a power supply; pistols come with a belt- or wrist-mounted power pack, whilst rifles have backpacks connected by a cable. As the Tech Level increases, power packs gradually become integrated into the weapons themselves.

These power packs can be recharged using a ship's power plant or another power source. It takes eight hours to recharge a power pack. Switching connectors from one pack to another is a Minor Action, although actions such as unstrapping one backpack and securing another can take significantly longer (1D rounds).

Also included in the general category of energy weapons are other non-slug 'projection' weapons such as flame and cryo guns and, at very high Tech Levels, exotic weapons like disintegrators.



Gauntlet Laser

ENERGY PISTOLS

All weapons described in this section require the Gun Combat (energy) skill to use effectively.

GAUNTLET LASER

Effectively a laser pistol mounted to the back of a shielded gauntlet, this weapon is powered by a backpack-carried energy source fed to it by a cable usually tethered around the arm. Although very similar to a laser pistol, the gauntlet allows the wielder to retain an open hand while still armed with a potent weapon.

HAND FLAMER

Packing a powerful flamethrower safely into a pistol-sized frame, the hand flamer is useful for boarding actions and other area clearance duties.

LASER PISTOL

The TL9 pistol is bulky but effective, with no recoil and a large magazine. At TL11, advances in battery technology and miniaturisation mean the pistol is no larger than a conventional firearm but must still be connected to a battery pack for sustained use.

MASER PISTOL

Using maser (within the microwave area of the electromagnetic spectrum) technology, this pistol carries little physical punch but is superb at breaching armour. The power cell carries an indefinite charge so long as it remains undamaged and will recharge itself after an hour of not being fired.

WEAPON	TL	RANGE	DAMAGE	KG	COST	MAGAZINE	POWER PACK COST	TRAITS
Gauntlet Laser	10	20	3D	2	Cr2500	100	Cr1100	Zero-G
Hand Flamer	10	5	3D	2	Cr1500	5	Cr25	Blast 2, Fire
Laser Pistol	9	20	3D	2	Cr2000	100	Cr1000	Zero-G
	11	30	3D+3	1	Cr3000	100	Cr3000	Zero-G
Maser Pistol	17	20	3D+3	2	Cr25000	12	—	AP 10, Zero-G
Matter Disintegrator	18	5	1DD	1	MCr2.5	—	Cr50000	Zero-G
	19	10	2DD	1	MCr4	—	—	Zero-G
Pepper Spray	5	3	Special	—	Cr5	5	Cr5	Stun
Personal Defence Laser	13	25	3D+3	2	Cr6000	25	Cr100	Auto 2, Zero-G
Stunner	8	5	2D	0.5	Cr500	100	Cr200	Stun, Zero-G
	10	5	2D+3	—	Cr750	100	Cr200	Stun, Zero-G
	12	10	3D	—	Cr1000	100	Cr200	Stun, Zero-G

MATTER DISINTEGRATOR

This highly advanced weapon causes atoms to release particles in rapid succession, effectively disintegrating its target. At TL19, the matter disintegrator integrates an effectively unlimited power source.

PEPPER SPRAY

Not technically an energy weapon but a dispenser for a chemical irritant, pepper spray, also referred to as bear spray or mace, fires a stream of chemical irritant to deter attack. Of limited range and only useful against targets with an exposed face (no helmet or mask), pepper spray is a defensive weapon that is sometimes used by law enforcement to disperse crowds and as protection on worlds that prohibit offensive ranged weapons.

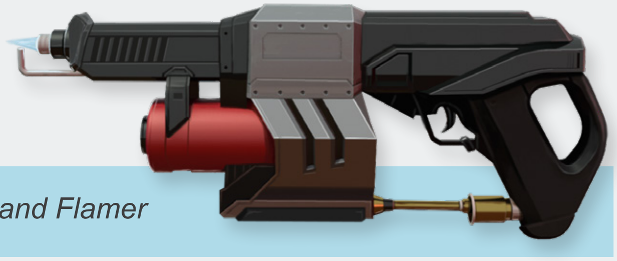
A wielder of a pepper spray dispenser can substitute an Average (8+) DEX check to attack if they do not have the Gun Combat skill. Any living target struck with the spray who does not have a respirator or sealed suit will be attacked as if by a poison with a Very Difficult (12+) END check, Damage 1D (Stun) and Interval of one round. The spray stops causing damage on a successful check or within 1D rounds.

PERSONAL DEFENCE LASER

A lightweight laser weapon fed by one-use chemical cartridges rather than an external power pack, the personal defence laser (PDL) uses a 25-round magazine inserted in the handgrip. It is capable of fully-automatic fire and is used as a sidearm by some military officers. It is somewhat bulkier than a laser pistol but remains manageable.

STUNNER

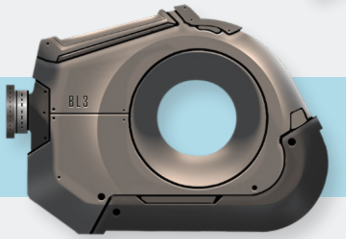
A non-lethal weapon designed to inflict a massive shock to the target, incapacitating it.


Hand Flamer

Laser Pistol

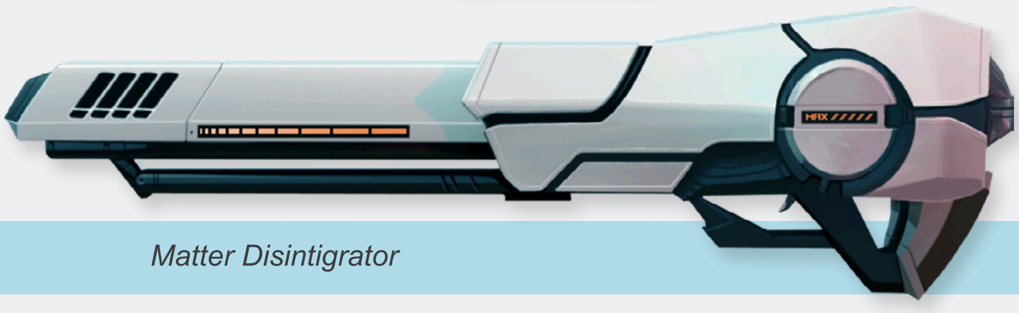
Maser Pistol

Stunners



Personal Defence Laser

Pepper Spray
Pepper Spray



Matter Disintigrator

ENERGY RIFLES

All weapons described in this section require the Gun Combat (energy) skill to use effectively.

CARTRIDGE LASER CARBINE

A cartridge laser carbine dispenses the need for a power pack by using a magazine that provides the necessary energy to fire the weapon via chemical reaction. This greatly reduces the overall weight, albeit at the cost of fewer shots. However, the cartridge is no slower to replace than a slug magazine and is disposable, meaning no lengthy recharges are required.

CARTRIDGE LASER RIFLE

A heavier, more powerful version of cartridge laser weapon, this rifle is capable of automatic fire.

CRYO RIFLE

Taking the technology of the cryojet (see page 160) and miniaturising it into the frame of a rifle, this weapon becomes the bane of even heavy infantry encased within battle dress. If a target wearing any kind of sealed protective suit is struck by a cryo rifle, they must make an Average (8+) STR check or be held in place for 1D rounds.

FLAME RIFLE

An advanced flamethrower, the flame rifle packs everything a firestarter needs into one compact package.

HEAVY LASER RIFLE

A large and somewhat unwieldy weapon, the heavy laser rifle is intended for snipers who hunt heavily armoured targets but it is equally well-suited to targeting light vehicles. The power pack is integrated into the weapon itself, removing the need for a heavy backpack.

ION RIFLE

At higher Tech Levels, ion technology has been miniaturised to the level that it can be used for personal weapons. At TL14, a hit from an ion rifle can disrupt robots, electronic equipment on vehicles or powered armour for 1D rounds. Powered armour or robots with Protection +20 or higher are immune and the weapon does not affect vehicles with Armour 4+. At TL15, the ion rifle is considerably more expensive but can penetrate personal or robot armour with any Protection and can momentarily disrupt vehicles with Armour 8 or less.

LASER CARBINE

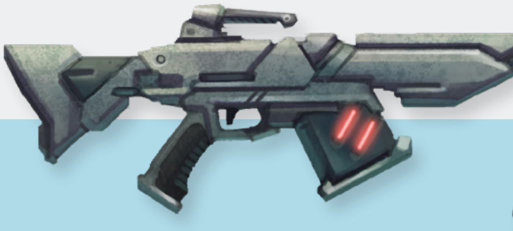
Laser carbines are shorter and lighter than laser rifles and have a correspondingly shorter range.

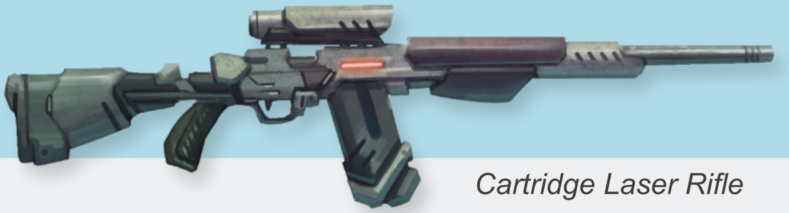
LASER RIFLE

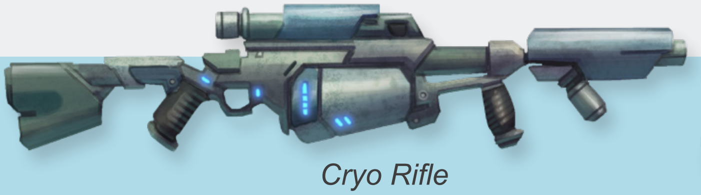
Laser rifles are highly accurate at long range and are powered by heavy backpacks.

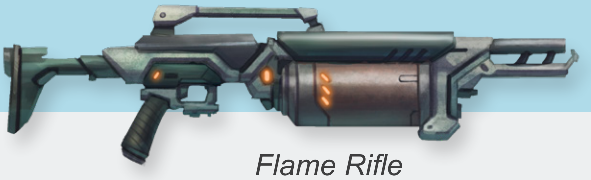
LASER SNIPER RIFLE

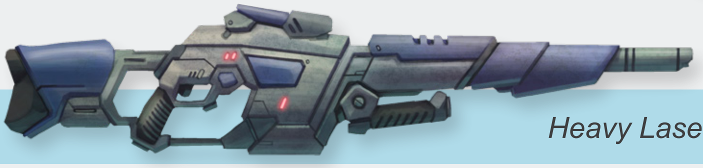
A six-shot model designed to be used for mobile sniping. The power pack is integrated into the weapon itself, removing the need for a heavy backpack.


Cartridge Laser Carbine


Cartridge Laser Rifle


Cryo Rifle


Flame Rifle


Heavy Laser Rifle

MASER RIFLE

A maser is a concentrated beam of microwave energy which boils a target from the inside. This makes it far more effective at destroying armoured targets and is far more potent than a laser rifle. The power cell carries an indefinite charge so long as it remains undamaged and will recharge itself after an hour of not being fired.

PLASMA RIFLE

TL16 technology allows the bulky reactor and plasma chamber of the PGHP (see page 163) to be made small enough to fit into a rifle frame. The plasma rifle is a high-powered weapon designed to crack battle dress.

SOLAR BEAM RIFLE

Using ambient solar radiation to create a short-ranged but powerful laser-like beam, this rifle is devastating against any human-sized target, capable of vaporising most targets it hits. The solar beam rifle has very limited storage capacity but automatically recharges if exposed to two hours of direct sunlight.

STAGGER LASER RIFLE

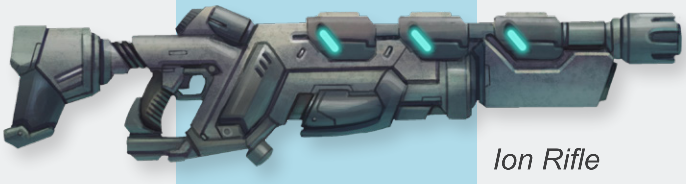
This weapon uses an industrial-grade beam splitter to create an automatic fire effect from a single powerful laser pulse. While reducing the energy of each individual shot, it allows a supporting role without massive amounts of energy, reducing the need for over-sized power packs.

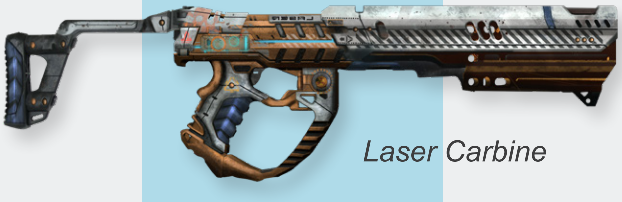
STUN BLASTER

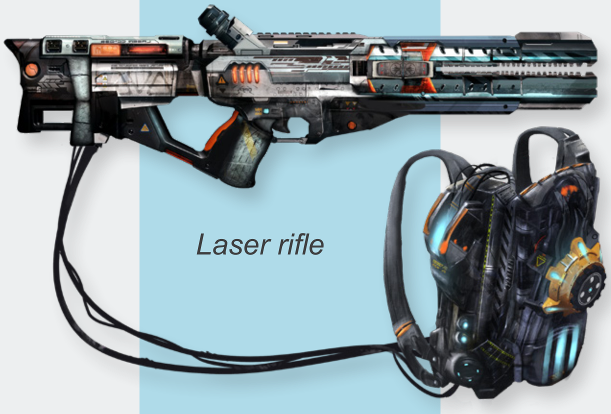
A non-lethal weapon designed to inflict a massive shock to the target or targets, incapacitating them. The stun blaster inflicts more damage than a smaller hand-held stunner and when set to blast, receives the Blast trait. Blast shots inflict reduced damage of 3D and consume two charges from the magazine.

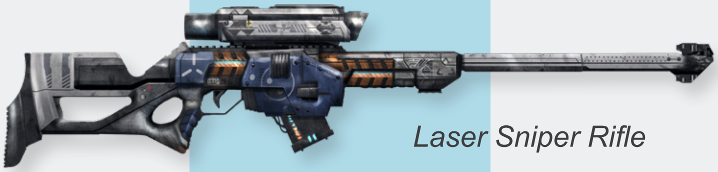
STUN CARBINE

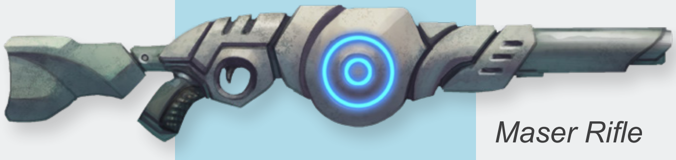
A stun carbine is a larger, longer-range version of the hand-held stunner. Its major advantage over a standard hand-held stunner is its range. The detachable power pack is mounted in the weapon's stock and is not interchangeable with power packs of smaller hand stunners.

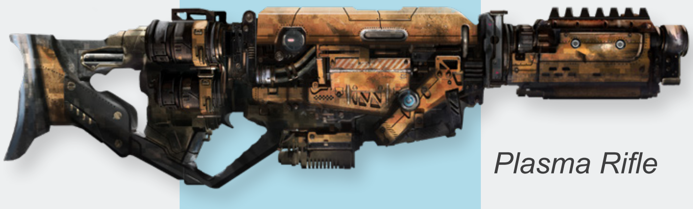

Ion Rifle

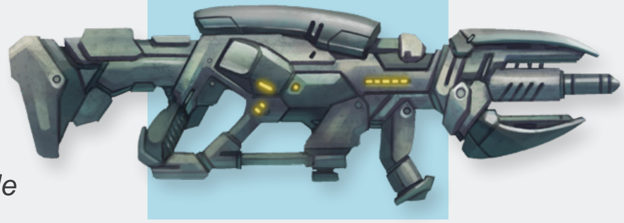

Laser Carbine

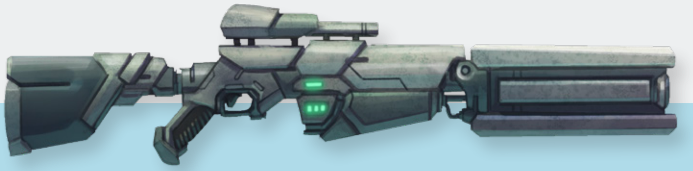

Laser rifle


Laser Sniper Rifle

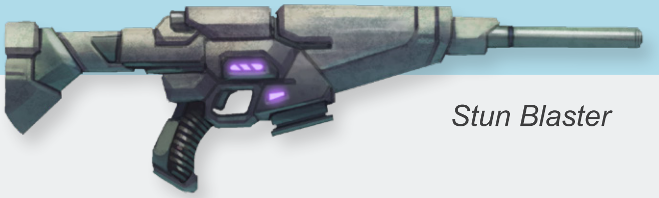

Maser Rifle


Plasma Rifle

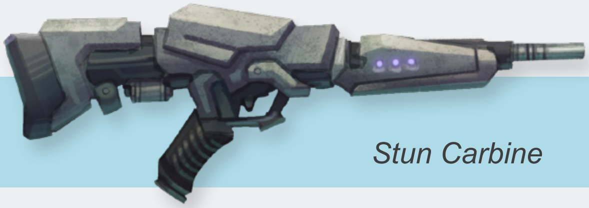

Solar Beam Rifle



Stagger Laser Rifle



Stun Blaster



Stun Carbine

WEAPON	TL	RANGE	DAMAGE	KG	COST	MAGAZINE	POWER PACK COST	TRAITS
Cartridge Laser Carbine	10	150	4D	3	Cr2500	15	Cr70	Zero-G
	12	200	4D+3	2.5	Cr4000	20	Cr70	Zero-G
Cartridge Laser Rifle	10	200	5D	5	Cr3500	20	Cr150	Auto 3, Zero-G
	12	400	5D+3	4	Cr8000	25	Cr150	Auto 3, Zero-G
Cryo Rifle	13	10	4D	9	Cr6000	12	Cr150	Blast 3
Flame Rifle	9	10	4D	8	Cr2500	10	Cr50	Blast 3, Fire
Heavy Laser Rifle	12	1200	6D	12	Cr14000	12	Cr500	Scope, Zero-G
Ion Rifle	14	600	Special	6	Cr16000	100	Cr5000	Zero-G
	15	800	Special	5	Cr24000	100	Cr8000	Zero-G
Laser Carbine	9	150	4D	4	Cr2500	50	Cr1000	Zero-G
	11	200	4D+3	2	Cr4000	50	Cr3000	Zero-G
Laser Rifle	9	200	5D	5	Cr3500	100	Cr1500	Zero-G
	11	400	5D+3	3	Cr8000	100	Cr3500	Zero-G
Laser Sniper Rifle	12	600	5D+3	4	Cr9000	6	Cr250	Scope, Zero-G
Maser Rifle	16	300	5D+3	8	Cr30000	20	—	AP 10, Zero-G
Plasma Rifle	16	300	6D	4	Cr100000	Unlimited	—	—
Solar Beam Rifle	17	500	1DD	4	Cr200000	20	—	AP 20, Zero-G
Stagger Laser Rifle	12	300	5D	4	Cr10000	50	Cr5000	Auto 2, Zero-G
	14	350	5D+3	3	Cr15000	100	Cr6000	Auto 3, Zero-G
Stun Blaster (beam)	13	20	4D	5	Cr3000	200	Cr500	Stun, Zero-G
Stun Blaster (blast)	—	—	3D	—	—	—	—	Blast 3, Stun, Zero-G
Stun Carbine	12	20	3D	4	Cr2000	50	Cr200	Stun, Zero-G

ARCHAIC WEAPONS

All weapons described in this section require the Gun Combat (archaic) skill to use effectively.

ATLATL

An atlatl is not a weapon in itself but a tool that uses leverage to achieve greater velocity and range when throwing a dart or javelin. The atlatl doubles the range of a dart or javelin and allows the wielder to add both STR and DEX bonuses to any damage result.

COMPOUND CAM BOW

This is a short bow made with advanced materials and incorporating a pulley device. The compound cam bow is as powerful as a traditional long bow but is much easier to handle.

CROSSBOW

A heavy weapon, cocked with a stirrup or windlass device, the crossbow is powerful and simple to use. It is slow-firing, however, taking 2D3 Minor Actions to reload.

DART

A short, thrown weapon distinguished by its weighted head and fletching, darts are smaller than javelins but heavier than arrows. A user may substitute Athletics (dexterity) skill for Gun Combat (archaic) when throwing a dart and may increase its range and possibly its damage by using an atlatl.

JAVELIN

A short spear designed for throwing, a javelin can be pressed into service as a footman's spear but is not ideal outside of its intended role. A user may substitute Athletics (dexterity) skill for Gun Combat (archaic) when throwing a javelin and may increase its range and possibly its damage by using an atlatl.

LONG BOW

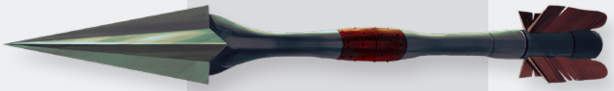
A long symmetrical or asymmetric bow; this is a powerful low-tech weapon but requires significant strength to pull.

REPEATING CROSSBOW

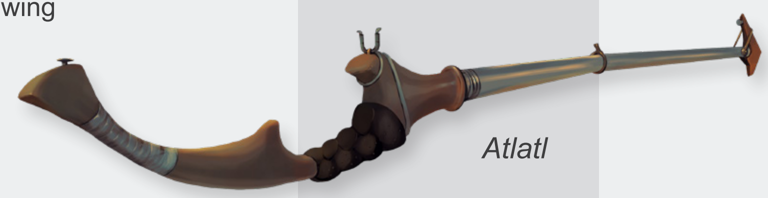
This is a weak but quick-firing crossbow, cocked by a lever and fed from a magazine of six bolts.

SHORT BOW

A light bow with a weaker pull, the short bow is primarily a hunting weapon but sees use in combat from time-to-time. Short bows are sometimes used from the back of animals.

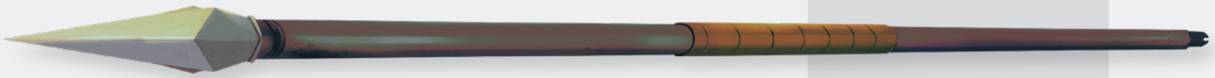


Dart

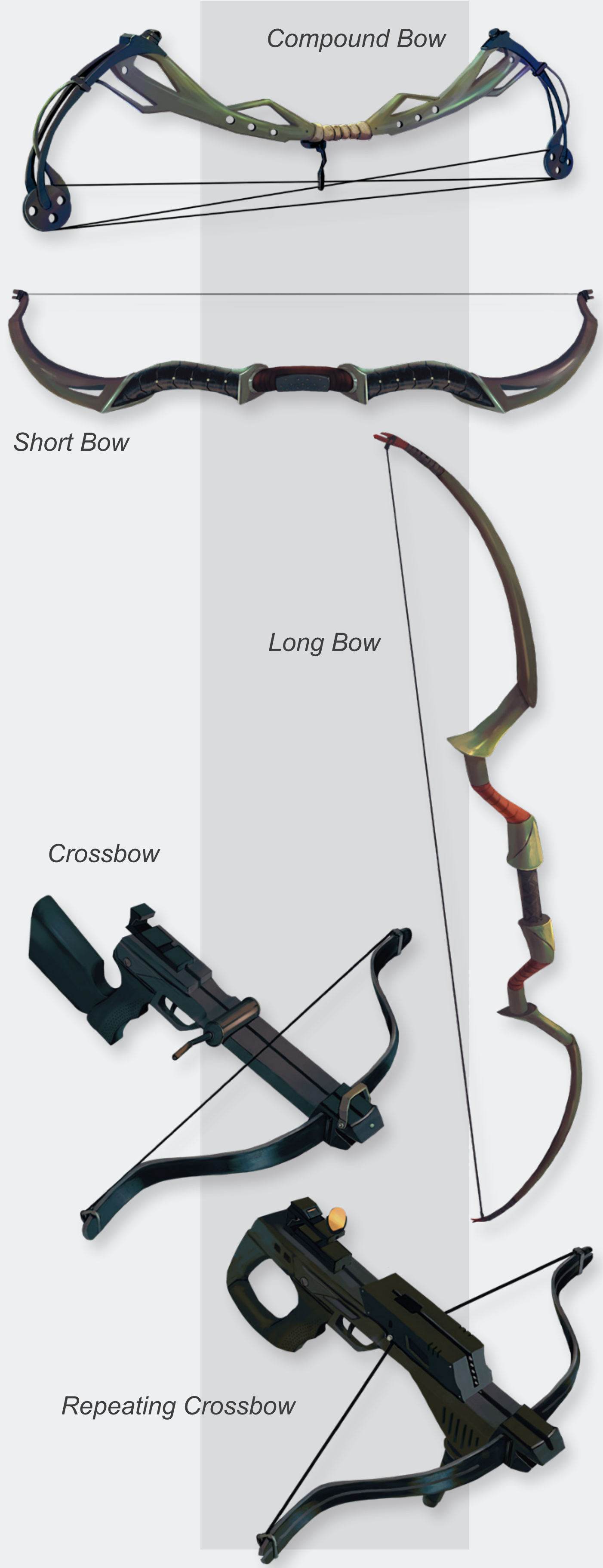


Atlatl

Javelin



WEAPON	TL	RANGE	DAMAGE	KG	COST	MAGAZINE	MAGAZINE COST	TRAITS
Atlatl	0	+100%	—	1	Cr20	—	—	—
Compound Cam Bow	5	100	3D-3	1	Cr250	1	Cr5	AP 2, Silent
Crossbow	1	100	3D-3	3	Cr200	1	Cr1	AP 2, Silent
Dart	0	50	2D-2	0.5	Cr10	—	—	One Shot, Silent
Javelin	0	25	2D	1	Cr10	—	—	One Shot, Silent
Long Bow	1	100	3D-3	1.5	Cr150	1	Cr1	AP 2, Bulky, Silent
Repeating Crossbow	2	75	2D	4	Cr400	6	Cr6	Silent
Short Bow	0	75	2D-3	1	Cr50	1	Cr1	Silent



SPECIALISED RANGED WEAPONS

All weapons described in this section require the Athletics skill to use effectively. Use of monofilament weapons retains skills from their conventional versions when used but they require a separate skill level in the specific monofilament weapon to avoid that weapon gaining the Dangerous trait. Any use of a ranged monofilament weapon without a specific skill of at least 1 results in the weapon becoming Dangerous.

BOLAS

This is a throwing weapon made from two or three weights fastened together by a cord. It is used to bring down an enemy rather than hurt them. A person hit by a bolas does not sustain any damage. Instead, they must make a Melee (unarmed) check opposed by the Athletics (dexterity) check of the attacker, as if being grappled. If failed, the defender is immobilised and falls prone. The defender can free themself by performing a successful Routine (6+) DEX check as a Significant Action.

BOOMERANG

The boomerang is a shaped piece of wood designed to be thrown and deliver damage to a target. Most boomerangs used for hunting do not return to the thrower but a returning boomerang can be purchased for Cr10. It inflicts DM-2 on attack rolls but if it misses a target it will return to the thrower in the next combat round. It can be caught with a successful Athletics (dexterity) check. The thrower will take damage equal to the Effect if it is negative and drop the boomerang.

MONOFILAMENT BOLAS

Unlike the primitive bolas, this weapon does not entangle an enemy but slices through any target with its monofilament cords. The bolas will not immobilise a target on a successful attack.

MONOFILAMENT NET

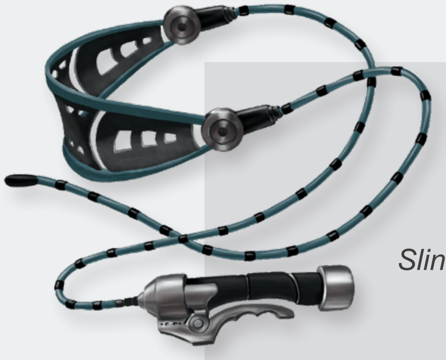
Unlike a standard net, this weapon is designed to slice its victim in multiple locations. A person attacked by a net must make a Melee (unarmed) check opposed by the Athletics (dexterity) check of the attacker, as if being grappled. If this check is failed, the defender suffers damage dice equal to the Effect of the failure. On subsequent rounds, the entrapped person can either remain immobilised, taking no further damage, or choose to try to escape by making a successful Difficult (10+) DEX check; failure causes additional damage dice equal to the negative Effect.

NET

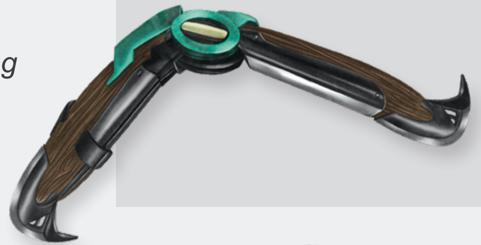
This is a large net, usually with weights fastened to its extremities. It is thrown over a target with the intention of entangling them. A person hit by a net does not sustain any damage. Instead, they must make a Melee (unarmed) check opposed by the Athletics (dexterity) check of the attacker, as if being grappled. If failed, the defender is immobilised. The defender can escape the net by making a successful Average (8+) DEX check (1D rounds).

SLING

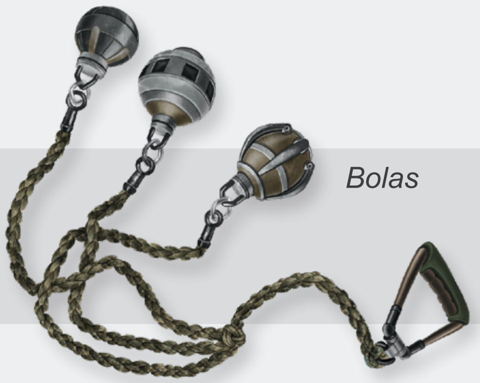
A projectile weapon which propels small stones or metal bullets using rotational energy. Slings are powerful but require a certain amount of skill to use effectively.



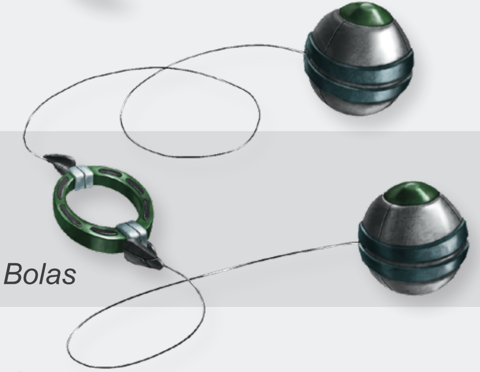
Sling



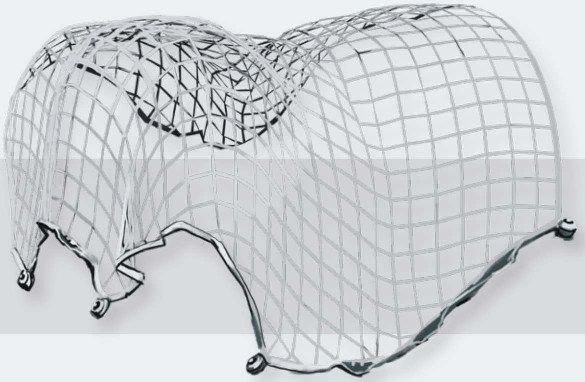
Boomerang



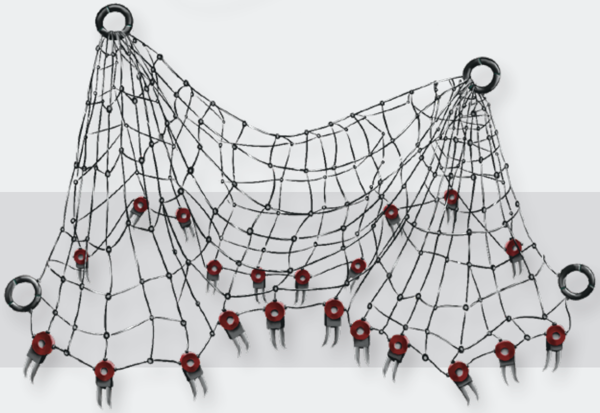
Bolas



Monofilament Bolas



Net



Monofilament Net

WEAPON	TL	RANGE	DAMAGE	KG	COST	MAGAZINE	MAGAZINE COST	TRAITS
Bolas	0	10	—	1	Cr5	1	—	Silent
Boomerang	0	25	1D	1	Cr5	1	—	Silent
Monofilament Bolas	12	10	3D	1	Cr500	1	—	AP 10, Silent
Monofilament Net	12	5	Special	1	Cr1000	1	—	AP 10, Silent
Net	1	5	—	1	Cr10	1	—	Silent
Sling	0	100	2D-2	—	Cr10	1	Cr1	Silent

GRENADE WEAPONS

Thrown grenades use the Athletics (dexterity) skill. Other weapons commonly called ‘grenades’, but are fired from grenade launchers, are more like little artillery shells and use the Heavy Weapons (portable) skill and Specialised Ammunition rules (see page 178) to achieve effects similar to those of thrown grenades.

AEROSOL

Aerosol grenades create a fine mist that diffuses any lasers fired into or through it but the mist does not block normal vision. Any laser attack tracing a line of sight into or through the mist has its damage reduced by -10. Laser communications are completely blocked by the mist. Aerosol clouds dissipate after 1Dx3 rounds, although heavy winds and rain can drastically reduce this time. Multiple uses will not increase this effect, only reset the time interval for dissipation.

CHEMICAL

This grenade creates a cloud of gas which, depending on composition, will either be incapacitating or deadly. Any living target within the cloud that does not have a respirator or sealed suit will be attacked as if by a poison with a Very Difficult (12+) END check, Damage 1D and Interval of 1 round. A non-lethal grenade will deal stun damage, while a lethal grenade cause injury and often death from lung and/or skin contact. Gas clouds dissipate after 1Dx3 rounds but heavy winds and rain can drastically reduce this time.

ELECTROMAGNETIC PULSE

This grenade, also called an EMP grenade, unleashes a burst of electromagnetic radiation that does not harm living tissue but causes unshielded electronics to shut down for 1D minutes. Unshielded electronics of more than two Tech Levels lower than that of the grenade will be permanently fried, while all electronics of more than two Tech Levels higher will be completely immune.

Aerosol

Electromagnetic Pulse

Chemical

Frag

WEAPON	TL	RANGE	DAMAGE	KG	COST	TRAITS
Aerosol Grenade	9	20	—	0.5	Cr15	Blast 9
Chemical Grenade	5	20	Special	0.5	Cr50	Blast 9
Electromagnetic Pulse Grenade	9	20	—	0.5	Cr100	Blast 6
Frag Grenade	6	20	5D	0.5	Cr30	Blast 9
Incendiary Grenade	7	20	2D	0.5	Cr75	Blast 3, Fire
Neurotoxin Grenade	9	20	Special	0.5	Cr250	Blast 9
Plasma Grenade	16	20	8D	0.5	Cr500	Blast 6
Smoke Grenade	6	20	—	0.5	Cr15	Blast 9
Stun Grenade	7	20	3D	0.5	Cr30	Blast 9, Stun
Thermal Smoke Grenade	7	20	—	0.5	Cr30	Blast 9
Tranq Gas Grenade	8	20	Special	0.5	Cr75	Blast 9

FRAG
Fragmentation grenades explode in a blast of shrapnel designed to kill or cripple anyone close by.

INCENDIARY
Incendiary grenades ignite their targets upon impact with a fuel mixture that continues to burn.

NEUROTOXIN
This grenade creates a cloud of gas that, if inhaled, will likely prove deadly. Any living target within the cloud that does not have a respirator or sealed suit will be attacked as if by a poison with a Very Difficult (12+) END check, Damage 1D INT and Interval of one round. Gas clouds dissipate after 1Dx3 rounds, although heavy winds and rain can drastically reduce this time. These grenades are banned, often even for military use, on any world of Law Level 1 or above.

PLASMA
A development of the frag grenade, the plasma grenade unleashes a microsecond burst of pure energy to vaporise its targets.

SMOKE
Smoke grenades create a thick cloud that disrupts vision. This imposes DM-2 to all attacks on targets within the cloud. IR vision completely bypasses this cloud of smoke. Smoke clouds dissipate after 1Dx3 rounds, although heavy winds and rain can drastically reduce this time.

STUN
Stun grenades release a powerful pulse of energy, usually in the form or light and/or sound that incapacitates targets rather than killing them.

THERMAL SMOKE
This acts as a smoke grenade but throws out hot particles that block IR vision as well. This imposes DM-2 to all attacks on targets within the cloud. Smoke clouds dissipate after 1Dx3 rounds, although heavy winds and rain can drastically reduce this time.

TRANQ GAS
This grenade creates a cloud of gas that, if inhaled, will likely render an enemy unconscious. Any living target within the cloud that does not have a respirator or sealed suit will be attacked as if by a poison with a Difficult (10+) END check, Damage unconscious and Interval of one round. Gas clouds dissipate after 1Dx3 rounds, although heavy winds and rain can drastically reduce this time.

Incendiary

Neurotoxin

Plasma

Thermal Smoke

Smoke

Stun

Tranq Gas

EXPLOSIVES

The Explosives skill is used with all explosives. The damage caused by an explosive is always multiplied by the Effect of the Explosives check used to set it. Effect 0 is treated as +1 but the Referee may apply unintended effects or consequences.

Doubling the quantity of an explosive will increase its damage by 1D and Blast by +1. Continually doubling the quantity of explosives will have a cumulative effect, for instance quadrupling the quantity will increase damage by 2D and Blast by +2, and eight times the listed quantity will increase damage by 3D and Blast by +3.

BREACHING CHARGE

This is a small pre-packed shaped charge for cutting or breaching. Charges are self-adhesive and can be set on a timer or command detonated. When a breaching charge explodes, it concentrates its force so while the blast radius is very small, the destructive effect is greatly enhanced.

COMPLEX CHEMICAL CHARGE

When two chemical polymers are combined physically, normally through a timed mechanical or electronic device, they react explosively. There is a D3 round delay between the chemical chain forming and the charge exploding but the resulting chemical detonation is very powerful and concentrated.

FUSION BLOCK

This is a dense and expensive material formed into a cube and fitted with a chemi-pressure trigger. This creates a shaped explosion of fusion energy. This explosion is extremely powerful and does not pause for most physical matter, sublimating it into gas almost instantly.

NEUTRINO DETONATOR

A complex device about the size of a laptop computer, the neutrino detonator uses a complex process to create a powerful explosion that sends a wave of overlapping neutrinos through all matter surrounding it. This wave causes breaks in the bonds that hold matter together. It has little direct effect on inorganic substances, which just return to their former state instantly. Organic matter, however, suffers major cellular damage. This explosion ignores all inorganic substances (walls, doors, armour and so on), inflicting its damage only on organic materials within its Blast. Armour provides no protection against a neutrino detonator.

PLASTIC EXPLOSIVE

This generic, multi-purpose plastic explosive is a favourite of military units, terrorists, demolition teams and Travellers across Charted Space.

POCKET NUKE

Hideously illegal on most worlds, the pocket nuke is actually the size of a briefcase and therefore too large to fit into a grenade launcher. Using multiple pocket nukes will not increase the Damage or Blast of the explosion.

TDX

An advanced gravity-polarised explosive, TDX explodes only along the horizontal axis.

Pocket Nuke

TDX

Plastic Explosive

WEAPON	TL	RANGE	DAMAGE	KG	COST	TRAITS
Breaching Charge	8	—	4D	1	Cr250	AP 6, Blast 1
Complex Chemical Charge	10	—	4D	1	Cr500	AP 15, Blast 9
Fusion Block	16	—	1DD	1	Cr10000	AP 50, Blast 12, Radiation
Neutrino Detonator	17	—	8D	1	Cr50000	AP ∞, Blast 25
Plastic Explosive	6	—	3D	1	Cr200	Blast 9
Pocket Nuke	12	—	6DD	4	Cr250000	Blast 1,000, Radiation
TDX	12	—	4D	1	Cr1000	Blast 15

HEAVY WEAPONS

Sometimes, a big mission can only be accomplished with a big gun. The weapons here are for those Travellers who possess both the skill and confidence. Illegal on many worlds, there is little better weapon with which to face the dangers of a hostile wilderness, pirate haven or war zone.

PORTABLE HEAVY WEAPONS

These are among the most powerful weapons to appear on the battlefield and require special training to use effectively. Only weapons mounted on vehicles and ships will be more powerful at any equivalent Tech Level. These weapons require the Heavy Weapons (portable) skill to use effectively.

ANTI-MATERIEL RIFLE

The anti-materiel rifle is a single-shot super-heavy rifle firing long cartridges at high velocity. It is designed to destroy light vehicles and will make a real mess of armoured infantry. It comes equipped with a bipod and scope, and although it can be fired from the hip, this is an arduous task for most individuals.

ASSAULT ROCKET LAUNCHER

The assault rocket launcher (ARL) fires 10mm solid-fuel rocket slugs. Ammunition is held in detachable magazines inserted into the underside of the weapon behind the pistol grip. The standard ARL is not capable of automatic fire. A more expensive support version is otherwise quite similar and magazines are interchangeable between the two. A personal defence weapon (PDW) variant also exists, which has an extremely short barrel and no stock.

All ARL weapons suffer DM-1 to attack rolls. The PDW variant suffers DM-2 to attack rolls made against targets beyond 10 metres. The ARL may use the rifle variant ammunition found in the Specialised Ammunition chapter.

CARTRIDGE PORTABLE PLASMA GUN (CPPG)

Firing a superheated chemical cell, the CPPG is an early plasma gun which uses a tubular magazine similar to that used by some shotguns. With integrated holographic sights (see page 175), the CPPG is an effective anti-material gun and sniping platform but it initially lacks range.

CRYOJET

In one way the opposite of a flamethrower, the cryojet projects a stream of cryogenically chilled liquid which can do massive damage to living tissue. However, its primary use is to freeze the joints of sealed armour, temporarily incapacitating the target. If a target wearing any kind of sealed protective suit is struck by a cryojet, they must make an Average (8+) STR check or be held in place for 1D rounds.

DISPOSABLE PLASMA LAUNCHER

This is a self-contained, disposable weapon launching an 80mm rocket-propelled directed plasma warhead. The plasma launcher is a deadly weapon able to destroy even high-technology armoured vehicles. It is a favoured import with mid-tech forces that need a deterrent against higher-tech foes.

EARLY MACHINEGUN

Once the principles of machineguns were understood, militaries were quick to adopt them. Design flaws and tendencies to jam were soon overcome, leaving a weapon that ruled the battlefield utterly.

FGHP

The ultimate personal firearm, the Fusion Gun, Human Portable (similar weapons are available for other species) is more like a piece of artillery. It includes a gravity suspension system to reduce its inertia and fires a pulse of what amounts to a directed nuclear explosion. Those without radiation protection who are nearby when a FGHP is fired will suffer a potentially lethal dose of radiation.

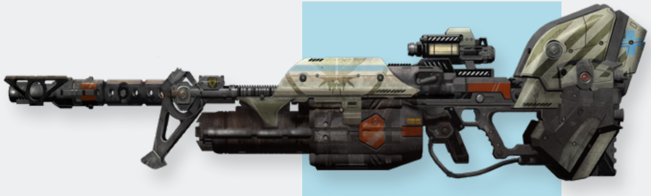
FLAMETHROWER

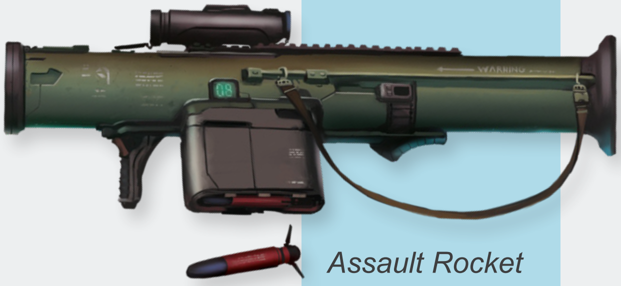
A relatively crude device, the flamethrower consists of a fuel tank, compressor and a nozzle that can project a torrent of fire for some distance. Changing magazines (fuel tanks) takes 2D rounds and if a person carrying a flamethrower is hit by any attack with an Effect of 4 or greater, the weapon will explode, destroying itself and immediately inflicting damage on the carrier as if they had been hit by it. Flamethrowers of TL8 or greater are not prone to explode in this fashion.

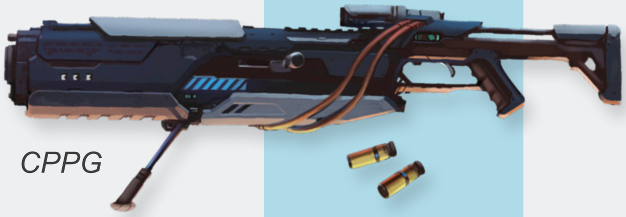
GRENADE LAUNCHER

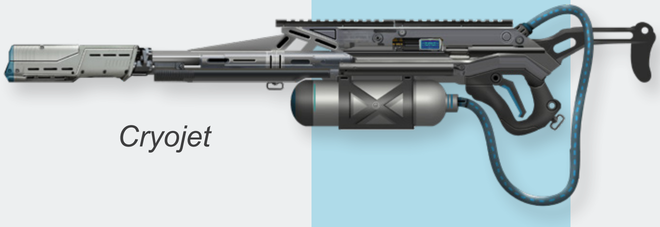
Grenade launchers are used to fire 40mm rifle grenades over long distances. The grenade launcher may use the heavy weapon variant ammunition found in the Specialised Ammunition chapter.

WEAPON	TL	RANGE	DAMAGE	KG	COST	MAGAZINE	MAGAZINE COST	TRAITS
Anti-Material Rifle	7	1000	5D	15	Cr3000	1	Cr10	AP 5, Scope, Very Bulky
ARL (standard)	10	80	4D	3	Cr800	20	Cr100	Zero-G
ARL (support)	10	80	4D	4	Cr1300	40	Cr200	Auto 4, Zero-G
ARL (PDW)	10	50	4D	2	Cr600	20	Cr100	Auto 4, Zero-G
CPPG-11	11	200	6D	12	Cr8000	6	Cr300	AP 6, Blast 2, Bulky, Scope
CPPG-12	12	300	8D	12	Cr15000	6	Cr450	AP 8, Blast 3, Bulky, Scope
CPPG-13	13	500	1DD	10	Cr25000	6	Cr600	AP 10, Blast 3, Bulky, Scope
Cryojet	11	10	4D	14	Cr4000	16	Cr200	Blast 5, Bulky
Disposable Plasma Launcher	12	300	2DD	8	Cr8000	—	—	One Shot, Smart
Early Machinegun	4	400	3D	14	Cr1200	30	Cr100	Auto 3, Very Bulky
FGHP-14	14	450	2DD	12	Cr100000	—	—	Radiation, Very Bulky
FGHP-15	15	450	2DD	12	Cr400000	—	—	Bulky, Radiation
FGHP-16	16	450	2DD	15	Cr500000	—	—	Radiation
Flamethrower	4	5	3D	20	Cr800	30	Cr60	Blast 5, Bulky, Fire
	6	5	4D	15	Cr1500	40	Cr80	Blast 5, Bulky, Fire
	8	10	4D	10	Cr2000	50	Cr100	Blast 5, Fire
Grenade Launcher	7	100	5D	2	Cr400	6	Cr180	Blast 6
Light Assault Gun	8	800	7D	40	Cr4000	5	Cr100	AP 5, Very Bulky
Light Gatling Laser	9	180	3D	18	Cr4500	100	Cr300	Auto 4, Zero-G
Machinegun	5	500	3D	10	Cr1500	60	Cr100	Auto 4, Bulky
PGHP-12	12	250	1DD	10	Cr20000	—	—	Very Bulky
PGHP-13	13	450	1DD	10	Cr65000	—	—	Bulky
PGHP-14	14	450	1DD	10	Cr100000	—	—	—
Plasma Jet	12	25	1DD	10	Cr16000	—	—	Blast 5, Very Bulky
	14	50	1DD	10	Cr80000	—	—	Blast 10, Bulky
RAM Grenade Launcher	8	250	5D	6	Cr800	6	Cr240	Auto 3, Blast 6, Bulky
Rapid-Fire Machinegun	7	500	3D	12	Cr3000	60	Cr100	Auto 4 (8), Bulky
Rocket Launcher	6	120	4D	8	Cr2000	1	Cr300	Blast 6, Bulky
	7	150	4D+3	8	Cr2000	1	Cr400	Blast 6, Bulky, Smart
	8	200	5D	8	Cr2000	2	Cr600	Blast 6, Bulky, Scope, Smart
	9	250	5D+6	8	Cr2000	2	Cr800	Blast 6, Bulky, Scope, Smart


Anti-Materiel Rifle


Assault Rocket Launcher


CPPG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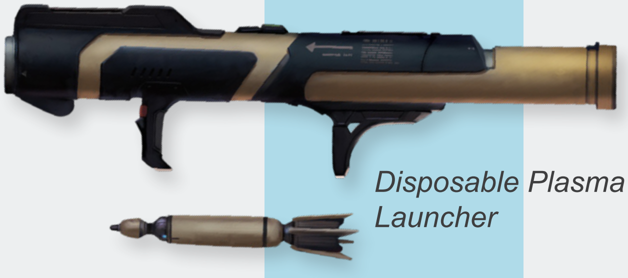
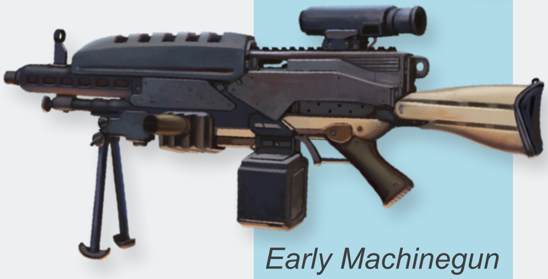
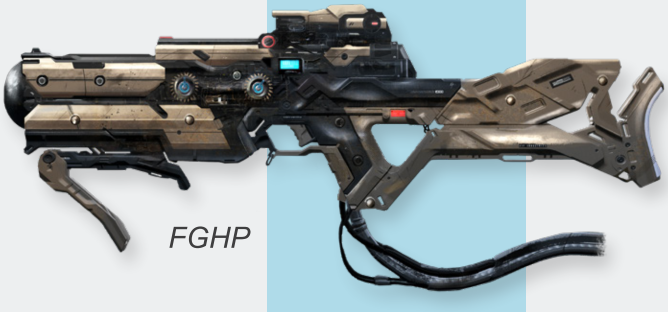
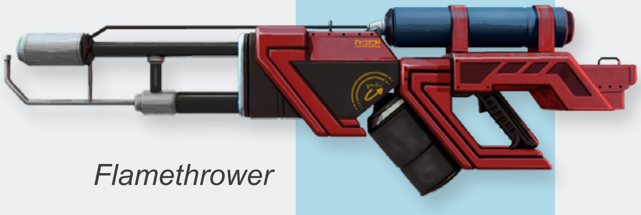
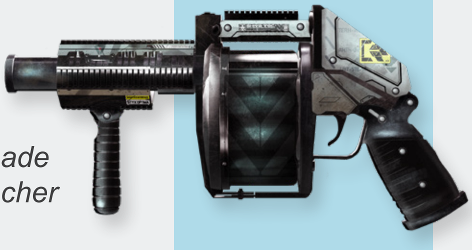
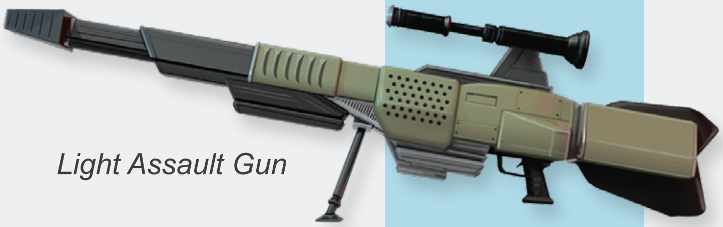

Disposable Plasma Launcher

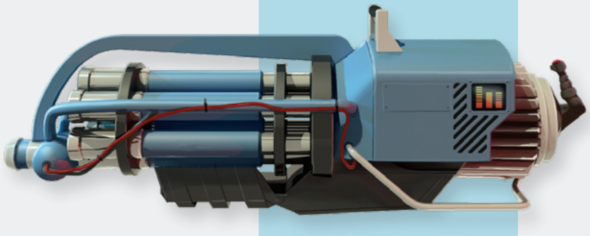

Early Machinegun

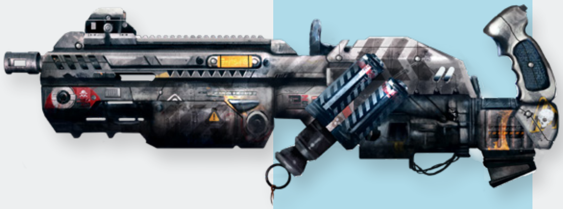

FGHP


Flamethrower


Grenade Launcher


Light Assault Gun


Light Gatling Laser


Machinegun

LIGHT ASSAULT GUN

This is a heavy 20mm calibre rifle, fed by a five-round magazine. It is intended to be truly human-portable, delivering extremely hard-hitting power at squad-level but its low rate of fire and small magazine mean its user must be adequately supported in a fire fight. The light assault gun comes equipped with a bipod and may use the heavy weapon variant ammunition found in the Specialised Ammunition chapter.

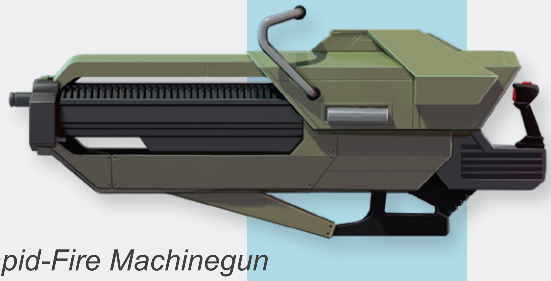
LIGHT GATLING LASER

An attempt to put a multiple barrel laser system into a small package, the light gatling laser is low-powered compared to similar support weaponry but is capable of delivering a hail of fire. This alone can defeat or at least scare off lower Tech Level enemies but it quickly runs out of steam against heavily armoured targets. However, there is little in its class that matches it for price versus performance. Firing chemical cartridges, the gatling laser uses disposable magazines which can be replaced in the same manner as slug thrower magazines.

PGHP

Plasma Jet

RAM Grenade Launcher



Rapid-Fire Machinegun

MACHINEGUN

A larger and less portable version of the autorifle, the machinegun may be relatively low tech but it is capable of sawing even armoured targets in half. The machinegun may use the rifle variant ammunition found in the Specialised Ammunition chapter.

PGHP

The Plasma Gun, Human Portable is the standard assault weapon of the marines. It is so heavy and bulky that it can only be used easily by a trooper in battle dress. It is powered by a built-in micro-fusion generator and fires a high-energy plasma stream. More advanced plasma guns adjust the weapon's optimum range and plasma temperature.

PLASMA JET

A crude use of plasma technology, the plasma jet is also the ultimate expression of primitive flamethrowers. Powered by a micro-fusion generator carried in a backpack, this weapon unleashes a short-ranged, barely controlled torrent of plasma capable of annihilating anything close by.

RAM GRENADE LAUNCHER

Rocket Assisted Multi-Purpose grenade launchers have a long range and are capable of firing up to three grenades in a single attack. The RAM grenade launcher may use the heavy weapon variant ammunition found in the Specialised Ammunition chapter.

RAPID-FIRE MACHINEGUN

This is a light machinegun tuned to develop an incredibly high rate of fire. The Auto score of this weapon may be doubled but the weapon must be left to cool for two rounds after this has been done. The rapid-fire machinegun may use the rifle variant ammunition types found in the Specialised Ammunition chapter.

ROCKET LAUNCHER

The poor man's FGHP. Anyone standing behind a rocket launcher when it is fired will be caught in its back blast and suffer 3D damage from the burning gases. It takes three Minor Actions to reload a rocket launcher. The rocket launcher may use the heavy weapon variant ammunition found in the Specialised Ammunition chapter.

Rocket Launcher

ARTILLERY WEAPONS

All weapons described in this section require the Heavy Weapons (artillery) skill to use effectively. All ranges are listed in kilometres. Any range listed in parentheses is the minimum range the weapon can fire at – it may not attack any targets closer than this. Unless otherwise stated, artillery weapons may use the variant ammunition types found in the Specialised Ammunition chapter.

BLACK POWDER MORTAR

A primitive short-barrelled smoothbore weapon, the black powder mortar is little more than a very short cannon placed upon a high-angle mount. They are sometimes called 'grasshopper guns' due to their tendency to jump about when firing.

BOMBARDMENT GUN

A fairly practical weapon as these things go, this super heavy gun is designed for bombardment of static or slow-moving targets. It is normally fielded as a railway gun, aboard a maritime vessel or as a coastal defence weapon.

DEMOLITION GUN

This is a short-barrelled petard weapon designed to deliver an extremely large explosive charge over a short distance. The demolition gun is normally mounted aboard engineering or assault support vehicles, to demolish fortifications and flatten obstructions.

HEAVY BOMBARDMENT GUN

This huge artillery piece most likely to be encountered as a coastal defence piece or aboard a maritime naval ship. Weapons of this type are occasionally used to launch sub-calibre rockets or missiles in the hope of creating a rudimentary aerospace defence capability but these are rarely successful. They are extremely slow to reload, with most models requiring 1D hours between firing shells.

HEAVY GUN

A standard artillery piece on many worlds, this gun is usually mounted on a vehicle. Some versions can handle small nuclear warheads but this is not usual. This weapon is theoretically capable of firing over open sights but it is somewhat ineffective in this role.

INFANTRY MORTAR

A light portable support weapon capable of launching small explosive bombs.

FORWARD OBSERVERS

On the battlefields of the far future, immense and powerful weapons can be deployed against the enemy. However, whether they be missiles or bombs from fast-flying aircraft, massive shells from artillery or apocalyptic energy blasts from orbiting spacecraft, they all still need eyes on the ground to be delivered accurately and effectively. This is where forward observers come in.

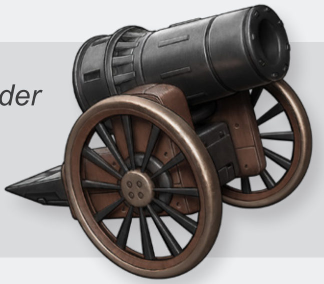
A forward observer is anyone who has a direct line of sight to a target and a communications link to a weapon delivery system capable of attacking the target but otherwise unable to make the attack due to being beyond line of sight (for artillery weapons), travelling too fast (aircraft) or simply being too far away to gain accurate visual sight (spacecraft in orbit).

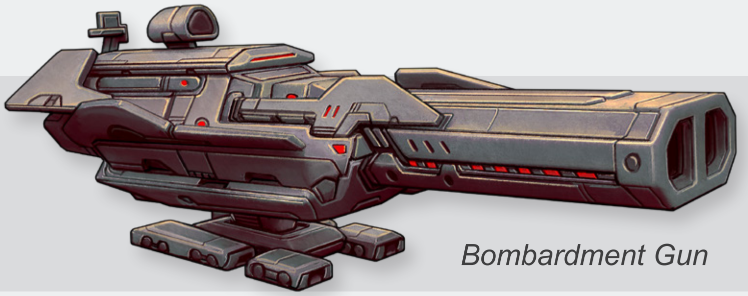
The forward observer makes an Electronics (comms) check (1D rounds, INT). Additional modifiers may be included as if this Electronics (comms) check was an attack roll, including those for battlefield conditions, cover and any other relevant factors.

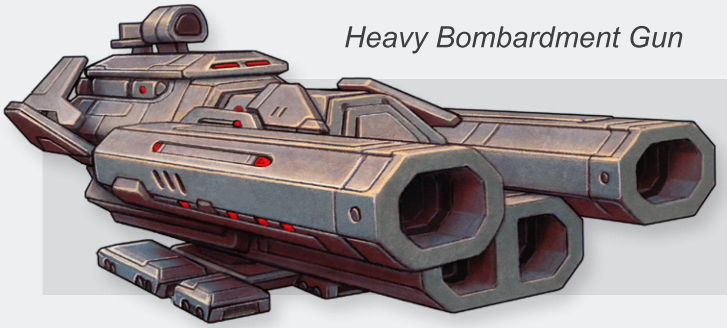
This check is then used as the start of a task chain, to be followed by a straight attack roll by the aircraft, artillery or orbiting spacecraft. The only modifiers applied to this attack roll are from the task chain and the skill of the attacker using the weapon, not the battlefield conditions applied to the forward observer check or any DMs for the conditions applied to the distant or fast-moving attacker.

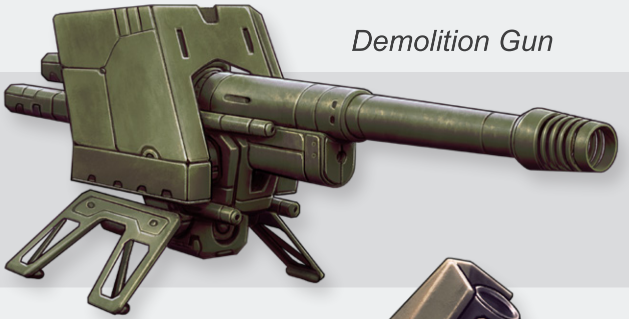
If the attack roll misses the target, roll 1D for each point of negative Effect, then multiply the total by 10 if the attack was from aircraft or artillery and 100 if it were from a spacecraft. This is the number of metres the attack misses by. The Referee can randomly determine in which direction the attack actually lands.

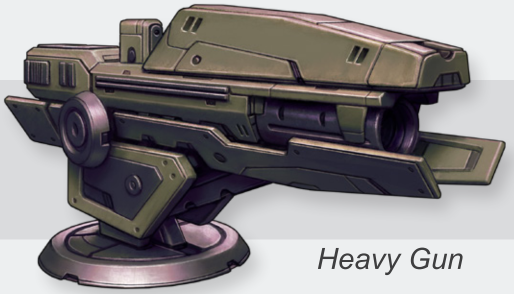
WEAPON	TL	RANGE	DAMAGE	TONS	COST	MAGAZINE	MAGAZINE COST	TRAITS
Black Powder Mortar	3	0.5	6D	0.5	Cr2000	1	Cr50	Artillery, Blast 6
Bombardment Gun	5	30 (10)	2DD	220	Cr500000	1	Cr1500	Artillery, Blast 20
Demolition Gun	6	0.1	1DD	5	Cr30000	1	Cr500	AP 10, Artillery, Blast 10
Heavy Bombardment Gun	5	40 (10)	3DD	500	Cr750000	1	Cr2500	Artillery, Blast 20
Heavy Gun	8	12	1DD	12	Cr120000	1	Cr400	AP 8, Artillery, Blast 10
Infantry Mortar	5	1 (0.1)	5D	0.012	Cr3500	1	Cr50	Artillery, Blast 5
Light Howitzer	5	6	8D	2	Cr50000	1	Cr150	Artillery, Blast 10
Light Gun	6	9	8D	2	Cr75000	1	Cr200	AP 5, Artillery, Blast 10
Mass Driver	12	40	1DD	7	Cr500000	1	Cr750	Artillery, Blast 10
Siege Gun	7	50 (10)	4DD	1,200	MCr19	1	Cr5000	AP 10, Artillery, Blast 50
Support Mortar	7	3	9D	0.25	Cr11000	1	Cr100	Artillery, Blast 6

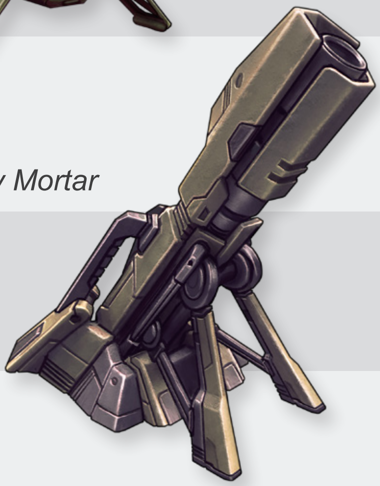

Black Powder Mortar


Bombardment Gun


Heavy Bombardment Gun


Demolition Gun


Heavy Gun


Infantry Mortar

LIGHT HOWITZER

A short-barrelled artillery piece crewed by up to six personnel and usually moved by animal power or towed by a vehicle, the light howitzer can deliver shells towards far off targets. It can also fire over open sights but there are far better weapons for this role.

LIGHT GUN

A long-barrelled artillery piece, this gun has a higher muzzle velocity than the equivalent howitzer and can hit targets further away. It is also more capable in the direct fire role.

MASS DRIVER

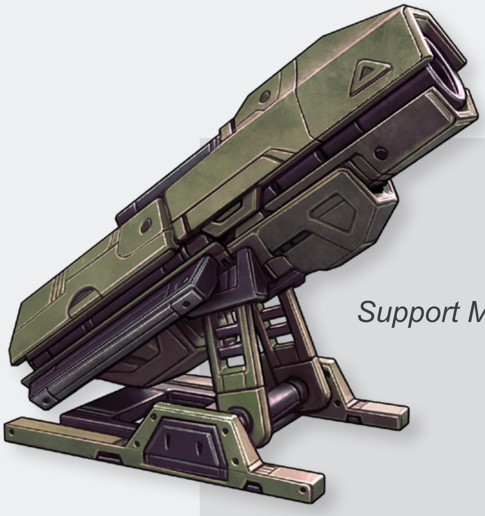
An advanced tube-based artillery piece using electromagnetic acceleration to hurl its payload, a mass driver will normally be mounted on a vehicle. It requires a crew of at least eight, including power technicians as well as gunners and is effective in the direct-fire role.

SIEGE GUN

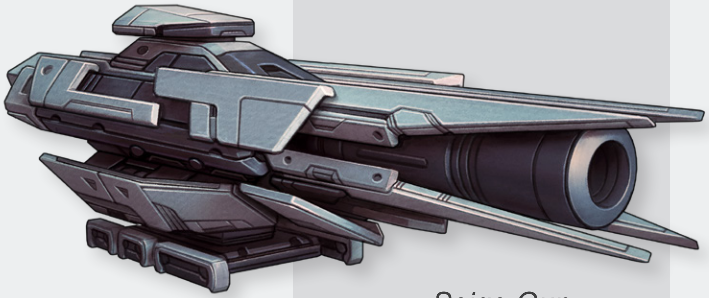
An updated version of the largest artillery piece ever built on old Terra, this 800mm siege gun must be moved in parts and assembled in its firing position, making it unwieldy and prone to counter-battery fire by lesser, but more practical, pieces. Its awesome warhead can be delivered to a target many kilometres away and a direct hit from its five ton shell would flatten a tank, or even a maritime vessel, with ease – before detonating. It is extremely slow to reload, requiring 1D hours between firing shells.

SUPPORT MORTAR

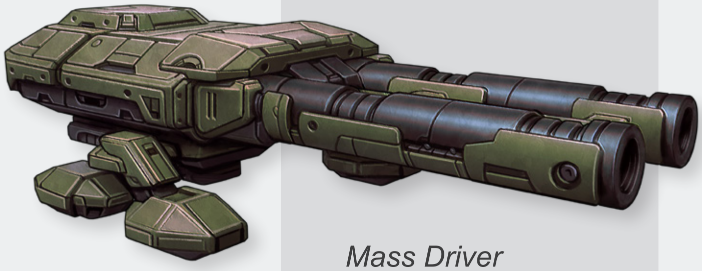
A heavy mortar mounted on a wheeled carriage rather than being carried by infantry, the support mortar flings a bomb in the 120mm range over a respectable distance.



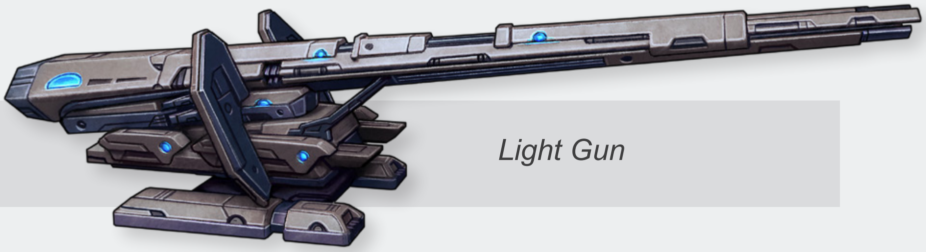
Support Mortar



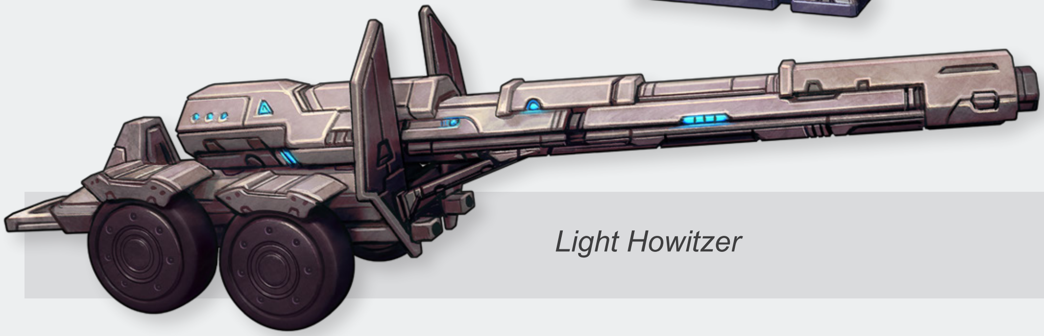
Seige Gun



Mass Driver



Light Gun



Light Howitzer

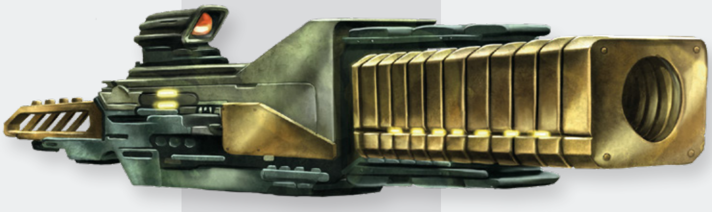
VEHICLE HEAVY WEAPONS

All weapons described in this section require the Heavy Weapons (vehicle) skill to use effectively. All ranges are listed in kilometres.

WEAPON	TL	RANGE	DAMAGE	TONS	COST	MAGAZINE	MAGAZINE COST	TRAITS
Aerospace Defence Laser	12	120	8D	12	MCr4	—	—	—
Light Autocannon	6	1	6D	0.25	Cr10000	500	Cr1000	Auto 3
Medium Autocannon	6	1	8D	0.5	Cr25000	100	Cr1500	Auto 3
Heavy Autocannon	6	1	1DD	1	Cr45000	100	Cr2000	Auto 3
Black Powder Cannon	3	0.5	7D	0.5	Cr3000	1	Cr50	—
Light Cannon	5	1.5	6D	1	Cr200000	50	Cr5000	Blast 6
Medium Cannon	6	2	1DD	2.5	Cr400000	30	Cr5000	Blast 10
Heavy Cannon	7	3	2DD	4	Cr600000	10	Cr5000	Blast 10
Field Gun	4	1	8D	0.5	Cr5000	1	Cr75	—
Fusion Gun-X	13	3	3DD	4	MCr2	—	—	AP 10, Blast 15, Radiation
Fusion Gun-Y	14	5	3DD	4	MCr3	—	—	AP 20, Blast 20, Radiation
Fusion Gun-Z	15	10	3DD	4	MCr8	—	—	AP 30, Blast 30, Radiation
Gatling Laser	8	4	6D	7	Cr125000	—	—	AP 5, Auto 4
Light Gauss Cannon	12	1	6D	0.5	Cr60000	200	Cr800	AP 5, Auto 3
Medium Gauss Cannon	12	2	1DD	1	Cr100000	200	Cr1000	AP 10, Auto 3
Heavy Gauss Cannon	12	3	2DD	2	Cr225000	60	Cr800	AP 15, Auto 2
Heavy Machinegun	6	1	5D	0.1	Cr4500	100	Cr400	Auto 3
Hypervelocity Cannon	13	5	2DD	20	MCr28	50	Cr5000	AP 30, Scope
Light Laser Cannon	9	2	8D	3	Cr60000	—	—	AP 5
Medium Laser Cannon	9	2.5	1DD	6	Cr100000	—	—	AP 10
Heavy Laser Cannon	9	25	2DD	9	Cr250000	—	—	AP 20
Meson Accelerator	15	150	4DD	60	MCr20	—	—	AP ∞, Radiation
Orbital Defence Cannon	14	5	4DD	35	MCr40	20	Cr10000	AP 30, Scope
Plasma Gun-A	10	6	2DD	4	Cr500000	—	—	AP 10
Plasma Gun-B	11	8	2DD	4	MCr1	—	—	AP 20
Plasma Gun-C	12	10	2DD	4	MCr1.5	—	—	AP 30
Rail Gun	9	4	1DD	3	Cr75000	50	Cr2500	AP 20
Rotary Autocannon	7	1	6D	0.5	Cr25000	500	Cr1200	Auto 5
VRF Gauss Gun	12	0.75	4D	0.25	Cr20000	400	Cr1000	AP 5, Auto 8
VRF Machinegun	7	0.5	4D	0.25	Cr12000	1,000	Cr1250	Auto 6

AEROSPACE DEFENCE LASER

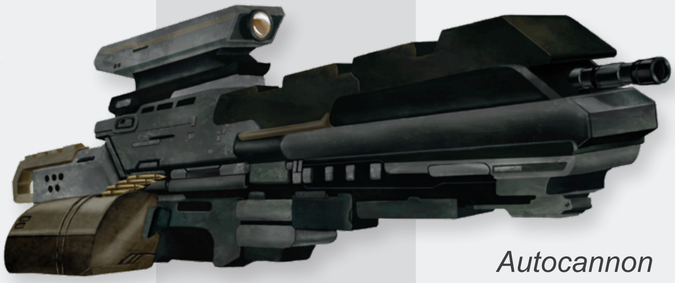
A powerful laser weapon designed for emplaced or mobile aerospace defence, it consumes immense power but delivers impressive damage. It is intended primarily to engage missiles and small craft but can attack starships, aircraft and grav vehicles equally well.



Aerospace Defence Laser

AUTOCANNON

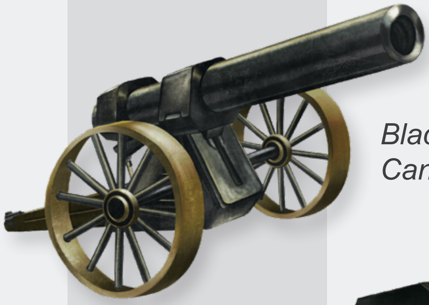
Autocannons are rapid-fire belt-fed weapons, with shells ranging from 20–65mm, capable of providing tactical support against infantry, light vehicles and aircraft. Autocannons are generally used to protect bunkers or mounted on light armoured vehicles, aircraft or aboard maritime vessels. Autocannons may use the variant ammunition types found in the Specialised Ammunition chapter.



Autocannon

BLACK POWDER CANNON

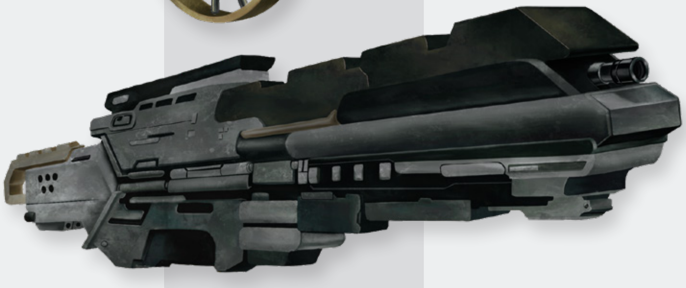
This is a simple smoothbore black-powder cannon capable of delivering shot out to a kilometre or so without any real degree of accuracy. Roundshot is the most commonly used ammunition, although canister shot is also popular. The black powder cannon typically requires a crew of six or so plus beasts of burden to move it. It may use canister rounds but not other variant types listed in the Specialised Ammunition chapter.



Black Powder Cannon

CANNON

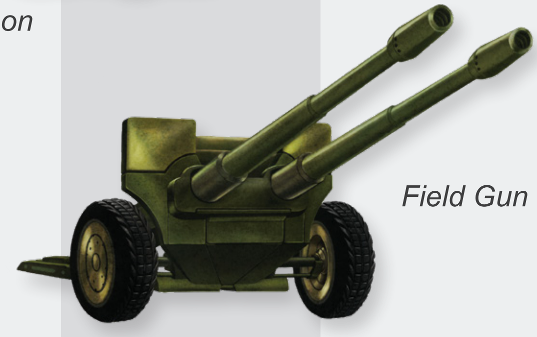
A large calibre gun used to arm the heavy tanks and armoured vehicles of mid-Tech Level armies. Cannons may use the variant ammunition types found in the Specialised Ammunition chapter.



Cannon

FIELD GUN

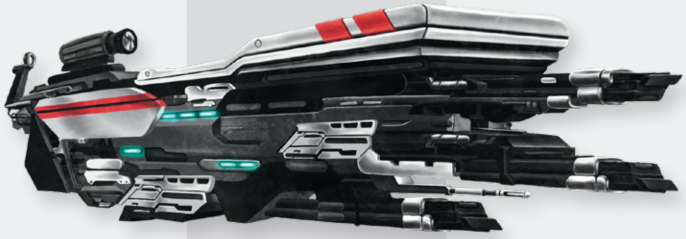
A rifled muzzle-loading cannon mounted on a horse-drawn carriage and requiring a crew of six or more, the field gun is more accurate at range than a smoothbore cannon. Field guns may use canister rounds but not other variants listed in the Specialised Ammunition chapter.



Field Gun

FUSION GUN

One of the most powerful ground-based weapons ever made, the fusion gun can blast through just about any material.



Fusion Gun

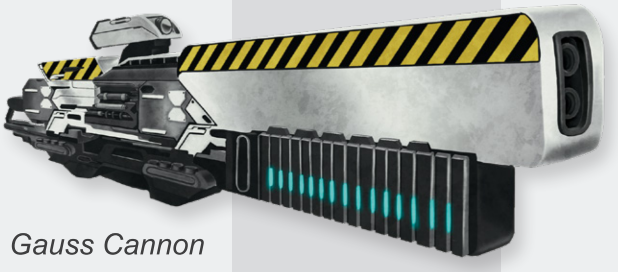
GATLING LASER

A relatively low-powered, vehicle-mounted laser weapon, the gatling laser uses several cryogenically cooled barrels fired in succession to deliver a hail of fire. The gatling laser is often used as an air-defence weapon.

Gatling Laser

GAUSS CANNON

This weapon uses advanced electromagnetic ('gauss') propulsion to accelerate a metal dart to tremendous speed. The projectile is a lump of dense metal which damages the target using kinetic energy and the gauss cannon is capable of firing them rapidly. The gauss cannon may use the variant ammunition types found in the Specialised Ammunition chapter.



Gauss Cannon

HEAVY MACHINEGUN

Designed to be mounted upon a vehicle or tripod, the heavy machinegun has proven effective against light vehicles and aircraft but is primarily intended to mow down advancing infantry. The heavy machinegun may use the rifle variant ammunition types found in the Specialised Ammunition chapter.

Heavy Machinegun

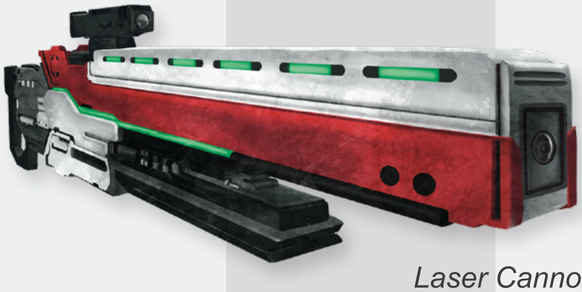
HYPERVELOCITY CANNON

The hypervelocity cannon uses electromagnetic propulsion, similar to a gauss weapon and is typically mounted in emplacements or very large vehicles. Despite its range, it can be used against targets in low orbit if it can be elevated far enough. This extended range (100 kilometres) is only useful in direct fire at airborne or orbital targets as this weapon cannot 'lob' its projectiles like a howitzer. The hypervelocity cannon may use the variant ammunition types found in the Specialised Ammunition chapter.

Hypervelocity Cannon

LASER CANNON

A single barrel laser main gun for a vehicle, the laser cannon is the first truly effective vehicle energy weapon.



Laser Cannon

MESON ACCELERATOR

A battlefield-grade meson accelerator requires a huge power supply and can only be mounted in emplacements or the very largest of vehicles. It is similar in operation to starship-grade meson guns in that the particles it accelerates do not interact with matter until they decay, allowing the weapon to effectively shoot through any obstruction so long as the target's location is known. Meson accelerators ignore all Armour and radiation shielding.

Meson Accelerator

ORBITAL DEFENCE CANNON

An extremely large hypervelocity cannon, this weapon can engage targets on the ground but, if elevated, can attack its preferred targets, low-orbiting spacecraft. If it does so, it increases its range to 1,000 kilometres.

PLASMA GUN

A heavy plasma gun designed for mounting on vehicles, this weapon is generally fitted to advanced grav vehicles and some aircraft. However, it is intended more as a support weapon than main anti-vehicle armament.

RAIL GUN

This is a powerful vehicle-mounted cannon that uses electromagnetic propulsion to fling a solid projectile in a flat trajectory that damages the target using kinetic energy. Time of flight to the target is less than conventional guns, making compensation for movement easier.

ROTARY AUTOCANNON

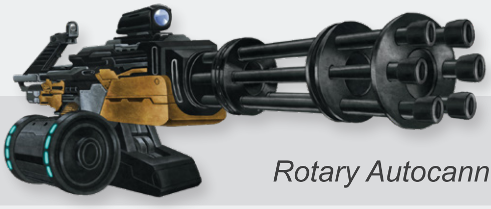
Although relatively small calibre, this autocannon utilises rotating barrels, enabling it to sustain a hideous rate of fire. It is equally effective against infantry and light vehicles and, with armour-piercing ammunition, it can even be useful against tanks. A rotary autocannon may use the variant ammunition types found in the Specialised Ammunition chapter.

VRF GAUSS GUN

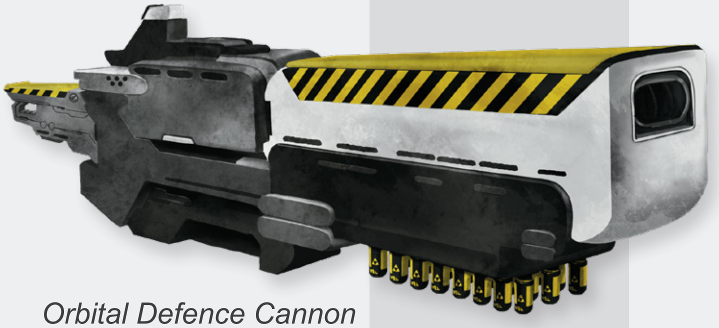
The very rapid-firing (VRF) gauss gun is a support weapon that uses electromagnetic technology to deliver withering bursts of fire. Often used as an anti-personnel weapon on vehicles, consumption of ammunition is prodigious and large hoppers are used to ensure adequate supply in combat. The VRF gauss gun may use the rifle variant ammunition types found in the Specialised Ammunition chapter.

VRF MACHINEGUN

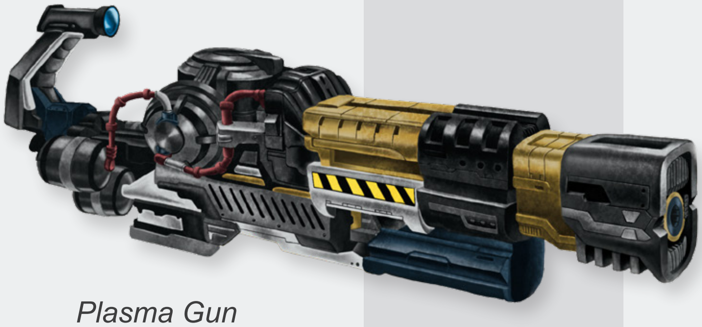
This weapon is constructed from six machinegun barrels which rotate through firing positions to maintain a very high rate of fire without adverse heating. The VRF machinegun may use the rifle variant ammunition types found in the Specialised Ammunition chapter.



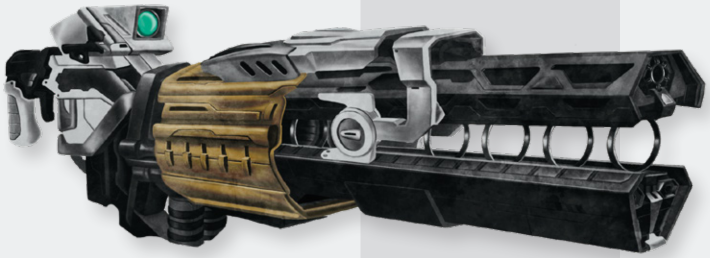
Rotary Autocannon



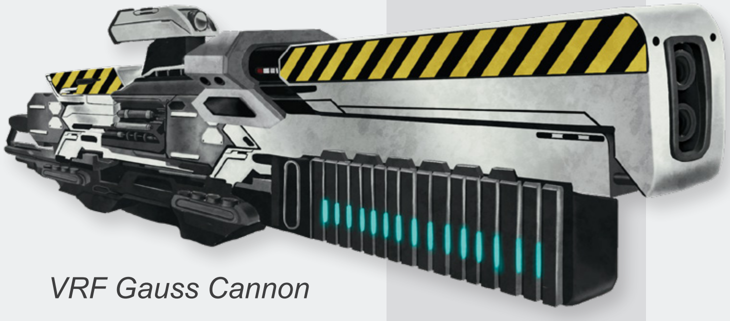
Orbital Defence Cannon



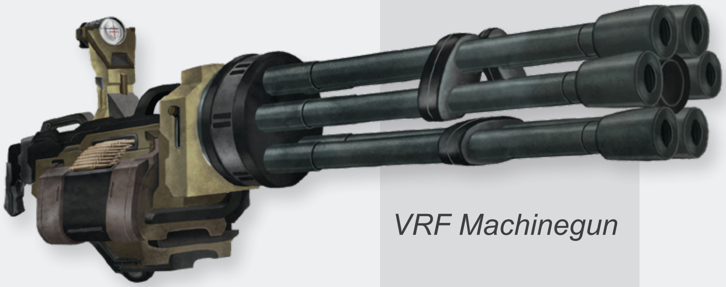
Plasma Gun



Rail Gun



VRF Gauss Cannon



VRF Machinegun

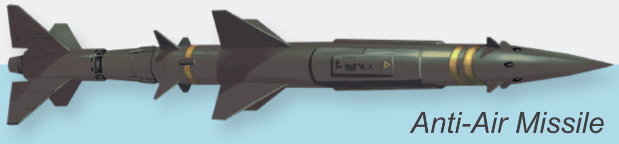
ROCKETS, MISSILES AND BOMBS

All weapons described in this section require the Heavy Weapons (vehicle) skill to use effectively. Ranges are listed in kilometres.

WEAPON	TL	RANGE	DAMAGE	TONS	COST	MAGAZINE	MAGAZINE COST	TRAITS
Light Anti-Air Missile	7	5	6D	0.25	Cr5000	1	—	One Use, Smart
Anti-Air Missile	7	8	8D	0.5	Cr12000	1	—	One Use, Smart
Long Range Anti-Air Missile	7	40	8D	0.75	Cr22000	1	—	One Use, Smart
Anti-Tank Missile	7	6	8D	0.5	Cr18000	1	Cr6000	AP 30, One Use, Smart
Bolt Thrower	1	0.2	4D	0.5	Cr2000	1	Cr25	AP 5
Light Bomb	4	—	1DD	0.1	Cr1500	1	—	AP 20, Blast 20, One Use
Medium Bomb	4	—	2DD	0.5	Cr4000	1	—	AP 25, Blast 25, One Use
Heavy Bomb	4	—	3DD	1	Cr8000	1	—	AP 30, Blast 30, One Use
Bombardment Missile	9	200	1DD	1	Cr36000	1	—	AP 20, Blast 20, One Use, Smart
Bombardment Rocket Rack	6	8	5D	2	Cr30000	12	Cr8000	Auto 3, Blast 15
Earthquake Bomb	4	2	5DD	10	Cr100000	1	—	Blast 250, One Use
Heavy Rocket Pod	6	2	6D	0.5	Cr12000	6	Cr6000	Auto 3, Blast 10
Plasma Missile Rack	12	50	4DD	2	MCr1	12	Cr400000	AP 20, Auto 3, Blast 15, One Use, Smart
Rocket Pod	6	1.5	4D	0.25	Cr8000	18	Cr8000	Auto 3, Blast 5
Tac Launcher (Anti-aircraft)	10	10	8D	0.25	Cr16000	4	Cr8000	Scope, Smart
Tac Launcher (Anti-personnel)	10	6	4D	0.25	Cr12000	4	Cr4000	Blast 10, Scope, Smart
Tac Launcher (Armour piercing)	10	6	8D	0.25	Cr15000	4	Cr6000	AP 10, Scope, Smart
Torpedo	4	1	1DD	0.5	Cr3000	1	—	AP 10, One Use, Smart
	5	5	3DD	0.5	Cr5000	1	—	AP 30, One Use, Smart
	8	50	5DD	0.5	Cr12000	1	—	AP 50, One Use, Smart
Water Cannon	5	0.1	—	0.5	Cr2000	10	—	—

ANTI-AIR MISSILE

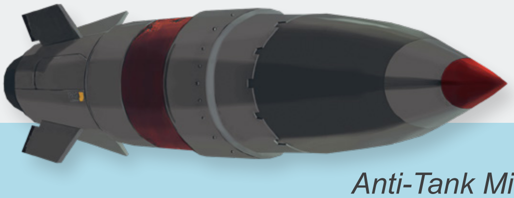
A standard weapon carried in the bays or hanging from the hardpoints of many fighter aircraft, the anti-air missile sees widespread use until direct energy weapons and advanced targeting systems arrive. The light anti-air missile is also found on ground vehicles to provide a cheap response to aerial threats. A longer-range version is designed to engage targets far beyond visual range and is mounted on dedicated interceptors.



Anti-Air Missile

ANTI-TANK MISSILE

Despite its compact size, this missile delivers a deadly punch. It is commonly seen on attack aircraft, although versions are also sometimes mounted as external auxiliary weapons on the turrets of lighter armoured vehicles to give them offensive capabilities against heavier enemies.



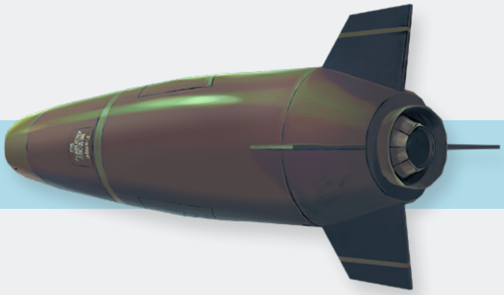
Anti-Tank Missile

BOLT THROWER

At lower Tech Levels this is effectively a giant crossbow, using either tension or torsion to fire heavy bolts the size of spears at enemy infantry and cavalry. As the technology becomes available, these are changed to compressed air.

BOMB

Unguided high explosive bombs are beautiful in simplicity but devastating in effect. Accurately dropped onto a target, they will blast apart anything short of a hardened fortification. Bombs may use the variant ammunition types found in the Specialised Ammunition chapter.



Bomb

BOMBARDMENT MISSILE

A large missile, this weapon is intended to rain death upon enemies at great distance. Typically fired in salvoes, it is the perfect weapon for attacking fortifications but has sufficient guidance systems to track moving vehicles. Bombardment missiles may use the variant ammunition types found in the Specialised Ammunition chapter.

Bombardment Missile

BOMBARDMENT ROCKET RACK

This usually appears as a self-contained rack suitable for mounting on the back of a truck or similar vehicle. It contains 12 large rockets with high-explosive warheads. Rockets can be fired one at a time or rippled off in a rolling salvo. These rockets may use the variant ammunition types found in the Specialised Ammunition chapter.

EARTHQUAKE BOMB

The earthquake bomb is the ultimate example of taking a good idea to its logical conclusion – an air-launched bomb that is as large as the aircraft of its Tech Level are capable of carrying. Normally, these are specially modified, although some societies may consider building aircraft dedicated to delivering these weapons. The immense damage caused by this bomb comes from the artificial earthquakes it generates after penetrating the ground and exploding. Earthquake bombs may use the variant ammunition types found in the Specialised Ammunition chapter.

Earthquake Bomb

HEAVY ROCKET POD

This pod contains six large rockets with high-explosive warheads. The pod can be fitted to most vehicles and aircraft and is usually aimed by pointing the craft. Rockets can be fired one at a time or rippled off in a rolling salvo. Heavy rocket pods may use the variant ammunition types found in the Specialised Ammunition chapter.

PLASMA MISSILE RACK

A terrifying weapon to be on the receiving end of, and capable of flattening entire cities when used en masse, the plasma missile rack ripple-fires medium-sized missiles to devastating effect. The plasma warheads detonate with the power of a small sun, vaporising anything within their lethal zone.

ROCKET POD

This is a pod containing small rockets with high-explosive warheads. The pod can be fitted to most vehicles and aircraft and is usually aimed by pointing the craft. Rockets can be fired one at a time or rippled off in a rolling salvo. Rocket pods may use the variant ammunition types found in the Specialised Ammunition chapter.

ROTARY AUTOCANNON

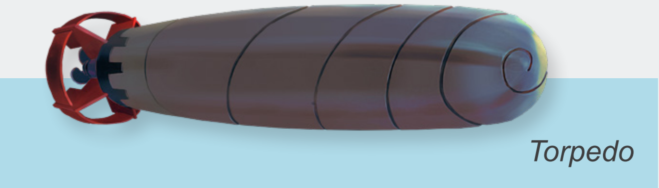
Although relatively small calibre, this autocannon utilises rotating barrels, enabling it to sustain a hideous rate of fire. It is equally effective against infantry and light vehicles and, with armour-piercing ammunition, it can even be useful against tanks. A rotary autocannon may use the variant ammunition types found in the Specialised Ammunition chapter.

TAC LAUNCHER

A support weapon capable of firing battlefield tactical (tac) missiles, this launcher provides a cheap and easy way to arm a vehicle with missiles. Tac launchers can use a variety of missiles.

TORPEDO

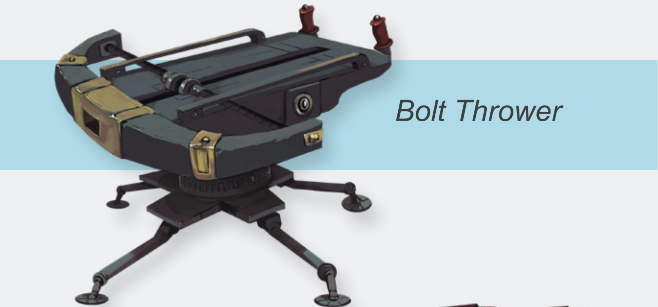
Effectively an underwater missile, torpedoes are large and unwieldy weapons when they first appear but can prove extremely threatening to even the largest ships. Development of torpedoes accelerates rapidly, spelling the demise of naval craft until defences improve to match them.



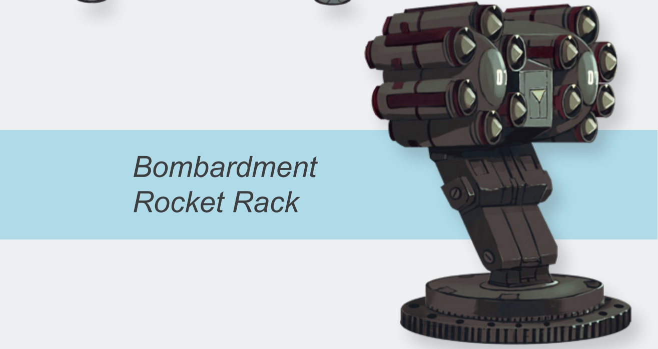
Torpedo

WATER CANNON

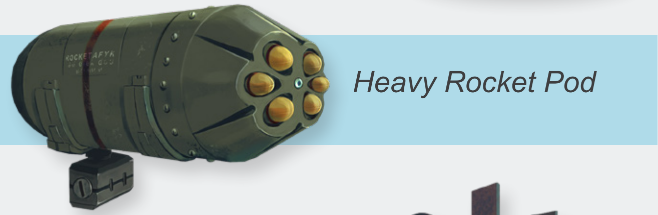
These are used for fire suppression, riot control and dispersal of chemicals. Any target struck by a water cannon must pass a Difficult (10+) STR check or be knocked prone and rendered helpless for one round. A water cannon's magazine is dependent upon how much water it has access to. Every extra 0.25 tons dedicated to the water cannon increases its magazine size by 10.



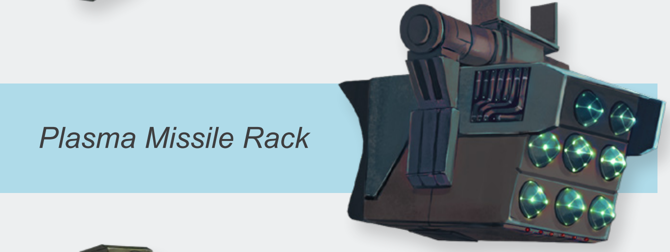
Bolt Thrower



Bombardment Rocket Rack



Heavy Rocket Pod



Plasma Missile Rack

Rocket Pod

TAC Launcher

Water Cannon

WEAPON ACCESSORIES

The customisation of weapons is as old as the first weaponsmith who started engraving runes onto the shaft of a spear in the belief the gods would aid their strength to whoever used it. Most custom weapons are about as effective but the canny arms expert knows certain additions can greatly enhance the capabilities of a well-cared for weapon.

Unless otherwise stated or allowed by the Referee, a weapon may only have one sight or scope.

AUXILIARY GRENADE LAUNCHER

Rifles may mount an under-barrel grenade launcher. This weapon is similar to the grenade launcher or RAM grenade launcher (see pages 160-163) but is single-shot and takes three Minor Actions to reload.

Item	TL	Effect	Kg	Cost
Auxiliary Grenade Launcher	7	Single-shot grenade launcher	1.5	Cr200
Auxiliary RAM Grenade Launcher	8	Single shot RAM grenade launcher	1.5	Cr400

BANDOLIER

This is a set of cartridge loops mounted on a leather or fabric strap or sling. A bandolier can hold seven individual shotgun cartridges, 20 pistol rounds or 14 rifle rounds. A different bandolier must be purchased for each ammunition type.

Item	TL	Effect	Kg	Cost
Bandolier	3	Holds cartridges: 7 shotgun, 20 pistol, or 14 rifle	—	Cr10

BAYONET

A knife-like weapon similar to a dagger or blade, a bayonet may or may not have a cutting edge but always has a stabbing point. When not attached to a rifle, a bayonet is treated as a dagger and will normally be carried in a belt scabbard. When attached to the muzzle of a rifle or similar weapon, it transforms the gun into a polearm. More advanced bayonets may incorporate tools such as wire cutters and bottle openers but the basic function is the same. A fixed bayonet requires the Melee (blade) skill but, at the Referee's discretion, any military-trained character with the Gun Combat skill will have been taught to fight with the bayonet and can use this skill instead if it is higher.

BIPOD

A weapon can be given a bipod support frame to stabilise and support it, making it much easier to handle. It takes two Minor Actions to set up a bipod. When a weapon is fired from a bipod, Bulky and Very Bulky traits are ignored.

Item	TL	Effect	Kg	Cost
Biopod	4	Can negate Bulky and Very Bulky traits	1	Cr50

CHAINDRIVE BAYONET

It took a creative but insane mind to come up with the idea of marrying a chainsaw to a bayonet but the addition of a chaindrive bayonet to a rifle certainly makes for an intimidating look. The battery-powered chaindrive will operate for 30 minutes of combat or intimidation before requiring a recharge.

Bayonet
Chaindrive Bayonet

WEAPON	TL	RANGE	DAMAGE	KG	COST	TRAITS
Bayonet	2	Melee	2D	1	Cr20	—
Chaindrive Bayonet	9	Melee	4D	3	Cr1000	AP 4, Bulky

FOF SAFETY

This is an integrated Friend-or-Foe scanner which can be added to any firearm. The scanner is built directly into the firing mechanism of any trigger-activated weapon. A transmitting tag is then worn by other personnel, emitting a signal to any FOF safeties it is coded for, up to 50 metres away. If the scanner tries to target an object within one metre of a transmitting tag, the gun will not fire. To better eliminate friendly fire incidents and other disloyal behaviour, many corporate or mercenary militaries use these devices as standard. Two transmitter tags are included in the purchase of the FOF safety and additional transmitter tags can be purchased for Cr25 each. The safety can also be integrated with a user's visual-based Friend or Foe HUD (see page 176) if present.

Item	TL	Effect	Kg	Cost
FOF Safety	9	ID and protect tagged friends to 50 m + 2 tags	—	Cr250
FOF Tag	9	Additional tag	—	Cr25

GYROSTABILISER

Stabilisers can be added to a Bulky weapon, reducing its recoil and removing the Bulky trait. It will reduce a Very Bulky trait to Bulky. Gyrostabilisers cannot be added to Destructive weapons.

Item	TL	Effect	Kg	Cost
Gyrostabiliser	9	Negates Bulky trait; non-Destructive only	1	Cr500

HEAVY TRIPOD

This is a collapsible mount, allowing individuals to use weapons usually intended for vehicles, although mobility will be restricted when carrying such weapons on foot. Weapons commonly used in this fashion include tac launchers and light autocannons. Any weapon of up to 0.25 tons may be mounted upon a tripod. It takes 1D minutes to set up a tripod and make the weapon ready for firing.

Item	TL	Effect	Kg	Cost
Heavy Tripod	4	Field use of vehicle weapons up to 0.25 tons	5	Cr100

HIGH-CAPACITY MAGAZINE

The ability for a weapon to hold more ammunition before requiring a change in magazine is always beneficial, especially on high rate-of-fire automatic weapons. High-capacity magazines, while bulky in use, are designed to solve this problem. Multiply the mass and cost of a weapon's standard magazine to purchase a high-capacity version. This will double the magazine's capacity of the weapon. The Referee may rule that some weapons (certain shotguns) cannot use high-capacity magazines.

Item	TL	Effect	Kg	Cost
High-capacity Magazine	4	Doubles magazine capacity	x2	x3

HOLOGRAPHIC SIGHTS

Holographic sights project an aim point for the user and automatically compensate for wind, gravity and other adverse conditions. They grant the Scope trait plus DM+1 to all attack rolls made against targets 50 metres or more away.

Item	TL	Effect	Kg	Cost
Holographic Sights	10	Scope + DM+1 to attack rolls beyond 50m	0.5	Cr2000

INTELLIGENT WEAPON

This adds Computer/0 capability to a weapon, scaling higher to match the Tech Level of the accessory. This is a prerequisite for the smart tracker which runs on a Bandwidth 0 program.

Intelligent Weapon	TL	Effect	Kg	Cost
Basic	11	Adds Computer/0 to any weapon	—	Cr1000
Improved	12	Adds Computer/1 to any weapon	—	Cr1000
Enhanced	13	Adds Computer/2 to any weapon	—	Cr1200
Advanced	15	Adds Computer/3 to any weapon	—	Cr2000

Heavy Tripod

Holographic Sights

LASER SIGHT

Integrated optics and laser sights grant DM+1 to any attack made at ranges of less than 50 metres. At TL10, ultraviolet lasers and improved display technology removes the tell-tale 'red dot' of a vislight laser.

Item	TL	Effect	Kg	Cost
Laser Sight (red dot)	8	DM+1 to attack rolls within 50m	—	Cr200
Laser Sight (UV dot)	10	+Invisible UV laser dot	—	Cr200

PERSONAL HEADS-UP DISPLAY (P-HUD)

A Personal HUD projects an aiming point onto an image of the target, automatically correcting for wind, gravity and other factors. Various display devices are available, ranging from a helmet visor to a pair of designer shades. A P-HUD grants DM+1 on all attack rolls at all ranges, for any ranged weapon it is keyed to. Modules that allow additional weapons to be used on the same P-HUD system cost Cr250 each and require an hour to fit and calibrate. There is no limit on how many weapons can be calibrated to one P-HUD. At TL11, the P-HUD incorporates a holographic projector and no obvious visual device need be worn.

Item	TL	Effect	Kg	Cost
P-HUD	9	DM+1 to all attack rolls for keyed weapons	0.5	Cr1500
P-HUD (holographic)	11	+Holographic display	—	Cr2500
Additional Weapon Key Module	9	Requires 1 hour to calibrate	—	Cr250

Personal Heads-up Display (P-HUD)

PSI-ENHANCED TARGETING

Using a linked wire network worn around the temples or integrated into headgear, a psionic user can employ their mental abilities to home in on a target. Truer than the images seen by organic eyes, the targeting system feeds telepathically-enhanced firing angles and timing directly to the user's brain. No other targeting aids or sights may be used in conjunction with this device but the user may add their PSI modifier to any shooting attack that does not use the Auto trait.

Item	TL	Effect	Kg	Cost
Psi-enhanced Targeting	16	Add PSI modifier to non-Auto attack rolls	0.5	Cr3000

SCAN JAMMER

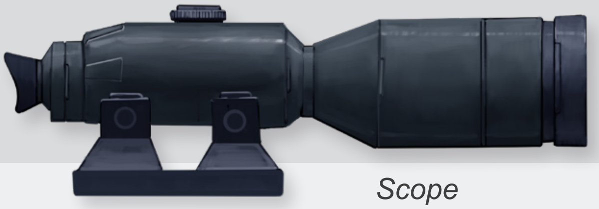
A highly illegal (at any Law Level above 0) addition to a weapon, frequently used by spies, agents and assassins, the scan jammer emits a localised sensor jamming field causing nearby scanning receivers to flicker and fail. All Electronics (sensors) checks made to discover the weapon suffer DM-4.

Item	TL	Effect	Kg	Cost
Scan Jammer	8	DM-4 to Electronic (sensors) checks for weapon	—	Cr2500

SCOPE

A high-quality telescopic scope for attachment to a rifle or heavy weapon, allowing accurate shots at extreme ranges. Any hand-held rifle or heavy weapon equipped with this gains the Scope trait. At TL7, image enhancement and light intensification are added, allowing the scope to be used in low-light environments without penalty.

Item	TL	Effect	Kg	Cost
Scope	5	Allows accurate shots at extreme ranges	—	Cr50
Scope (electronic)	7	+Low-light image and light enhancement	—	Cr50



Scope

SECURE WEAPON

A secure weapon requires authentication in some fashion (scanning the user's DNA or iris patterns, entering a password, transmission of an unlocking code from a comm and so on.) before it can be fired. On many worlds this option is required for licensed firearm sales.

Item	TL	Effect	Kg	Cost
Secure Weapon	10	Requires authentication before firing	—	Cr250

SHOULDER STOCK

A shoulder stock may be attached temporarily to a pistol weapon, resulting in a crude carbine arrangement and greater accuracy at longer ranges. The overall length of the pistol is increased by the length of the stock and the pistol cannot be holstered while it is attached. Attaching the stock (or detaching it) requires 1D rounds. A shoulder stock increases the effective and long range of a pistol by +25% but does not increase its extreme range. A TL9 version of this stock is a compact, storable, automatically telescoping stock which requires one Significant Action to attach or detach.

Item	TL	Effect	Kg	Cost
Shoulder Stock	4	Increase effective and long range by 25%	1	Cr75
Shoulder Stock (telescoping)	9	Increase effective and long range by 25%	0.5	Cr500

SMART TRACKER

This is a display option that may be added to any intelligent weapon (see page 175), increasing the accuracy of a firearm. The smart tracker allows the user to 'tag' any target they have successfully hit with the weapon by spending a Minor Action in the same round the weapon has scored a hit. Any tagged target fired upon by the weapon in the following round will gain DM+2 to attack rolls. A target must be tagged each round for the bonus to continue.

Item	TL	Effect	Kg	Cost
Smart Tracker	11	Allows DM+2 to attack rolls 'tagged' target	—	Cr500

SUPPRESSOR

A suppressor can be added to any non-automatic slug thrower, masking the sound produced by firing. A suppressor adds the Silent trait to a weapon.

Item	TL	Effect	Kg	Cost
Suppressor	8	Adds Silent trait to non-automatic slug thrower	—	Cr250

X-RAY OUTLINING AID

By adding an outlining element to an existing scope, the user can see exactly where their target lies behind an obscuring object. So long as the object is not made of metal, shielded or more than a metre thick, the target may not hide behind it (although it will still gain its usual Protection bonus – see page 78 of the *Traveller Core Rulebook* for details). The TL11 version is more powerful and can function through up to three metres of material.

Item	TL	Effect	Kg	Cost
X-Ray Outlining Aid (1m)	9	Removes cover DM up to 1m thick from target	—	Cr300
X-Ray Outlining Aid (3m)	11	+Barrier up to 3m thick	—	Cr500

SPECIALISED AMMUNITION

The weapons specialist knows a bullet is never just a bullet. One advantage slug throwers have over energy weapons is that their ammunition can be customised, often heavily, to achieve specific desired outcomes (which normally result in a dead enemy). As the size of the shell increases, so do the options available, with large artillery pieces being capable of firing an amazing array of warheads.

The rules and options provided here should be treated as a toolkit which can be modified to suit a specific universe, world or even individual arms manufacturer. As always, the Referee is the final arbiter of what is possible and they may rule that some ammunition types are not available for certain guns.

Every type of ammunition in this chapter includes a table describing the weapons it is likely to be available for. The Referee can use this as a guideline. Unless specifically indicated, any single round of ammunition may normally only have one of these modifications.

Any modifiers to the ammunition's damage, cost, range or other characteristics will also be noted here. A blank line in the table means there is no change from the weapon's normal operation.

MODIFICATIONS

AEROSOL

Aerosol rounds disperse a fine mist that diffuses any lasers fired into or through it but the mist does not block normal vision. Any laser attack tracing a line of sight into or through the mist has its damage reduced by -10. Laser communications are completely blocked by the mist. Multiple uses will not increase this effect, only resetting the time interval for dissipation.

ARMOUR PIERCING

These rounds are pointed projectiles of dense or very hard material designed to punch through armour. AP ammunition provides a weapon with an AP trait equal to the number of damage dice it rolls. If the weapon already has the AP trait, this is added to the final AP score.

AMMUNITION-SPECIFIC WEAPONS

A weapon must have a listed magazine cost in order to be able to use the ammunition in this chapter. In addition, the following weapons may not use this ammunition:

Air Rifle
Antique Pistol and Rifle
Archaic Weapons
Coach Pistol
Duck's Foot Pistol
Energy Weapons
Flechette Weapons
Magrail Weapons
Shot Pistol

To use a particular modification, the weapon firing it must be manufactured at a Tech Level matching or higher than the listed Tech Level of the ammunition type. In addition, heavy weapons may not use the ammunition in this chapter, unless otherwise stated in their description.

HIGH DAMAGE WEAPONS

If a non-Destructive weapon has its Damage score increased to 10D or higher, it becomes a Destructive weapon with Damage 1DD. It cannot be increased beyond this.

WEAPON	TL	RANGE	DAMAGE	COST	TRAITS	PISTOL	RIFLE	SHOTGUN	HEAVY
Aerosol	7	—	—	x3	Blast 12	—	—	—	✓
APDS	5	+10%	-1 per dice	x5	AP X	—	✓	—	✓
Armour Piercing	4	—	—	x4	AP X	✓	✓	✓	✓
Baton	5	-25%	Stun/ Regular	x2	Stun (50%)	✓	✓	✓	✓
Bomblet	7	—	3D	x4	Blast 20	—	—	—	✓
Canister	3	20	4D	x2	Blast 20	—	—	—	✓
Chemical	5	—	Special	x5	Blast 12	—	—	—	✓
Concussion	7	—	4D	x1	Stun	—	—	—	✓
Directed Plasma	15	—	+1D	x10	AP x3, Blast 0	—	—	✓	✓
	16	—	+1D	x10	AP x3, Blast 0	✓	✓	—	—
Electromagnetic Pulse	9	—	None	x10	Blast 20	—	—	—	✓
Extended Range	7	+25%	-1D	x3	—	✓	✓	—	✓
Flare	4	—	None	x1	Blast 100	—	—	—	✓
Foam	9	—	Special	x5	—	—	—	—	✓
	11	—	Special	x5	—	—	—	✓	✓
Fragmentation	6	—	4D	x1	Blast x2	—	—	—	✓
Fuel-air	7	—	1DD	x8	Blast x3	—	—	—	✓
Guided	7	—	—	x6	Smart	—	—	—	✓
	10	—	—	x6	Smart	✓	✓	—	✓
HEAP	5	-25%	+1D	x8	AP Special	—	—	—	✓
Incendiary	8	—	—	x3	Blast X, Fire	✓	✓	✓	✓
Net	8	-50%	Special	x3	Blast x0.5	—	—	—	✓
Neurotoxin	5	—	Special	x10	Blast 12	—	—	—	✓
Nuclear	6	—	6DD	x20	Blast 500, Radiation	—	—	—	✓
Plasma	15	—	+1D	x10	AP x2, Blast x2	—	—	✓	✓
	16	—	+1D	x10	AP x2, Blast x2	✓	✓	✓	✓
Smoke	4	—	None	x1	Blast 12	—	—	—	✓
Solid Shot	5	-25%	—	x2	AP X	✓	✓	✓	✓
Thermal Smoke	7	—	—	x2	Blast 12	—	—	—	✓

Armour Piercing

HEAP

Incendiary

ARMOUR PIERCING DISCARDING SABOT (APDS)

Representing several variations on the theme of a rod penetrator launched with a sabot and featuring increasingly long acronyms, APDS is an anti-armour round representative of various efforts to get through armour. APDS ammunition provides a weapon with an AP trait equal to triple the number of damage dice it rolls but reduces damage by one point per damage dice. If the weapon already has the AP trait, this is added to the final AP score. Artillery weapons and bombs may not use ADPS rounds.

BATON

A baton round is non-lethal, usually filled with rubber, plastic or some less solid material. It is far from harmless but will deliver less lethal results, with half (round up) of any hits applied as Stun damage. Any AP or Blast traits are negated by the use of a baton round.

BOMBLET

Bomblet rounds are warheads that break apart above the target to scatter small bomblets over a wide area. Only Artillery weapons and bombs may use bomblet rounds and any AP trait will be lost when they are used.

CANISTER

Also called beehive, grapeshot and flechette, canister rounds are used for close-range defence against enemy infantry and effectively turns the weapon into a giant shotgun. Artillery weapons and bombs may not use canister rounds.

CHEMICAL

This round creates a cloud of gas which, depending on composition, will either be incapacitating or deadly. Any living target within the cloud that does not have a respirator or sealed suit will be attacked as if by a poison with a Very Difficult (12+) END check, Damage 1D and Interval of one round. A non-lethal round will do stun damage, while a lethal round causes injury and often death from lung and/or skin contact. Gas clouds dissipate after 1D x three rounds, although heavy winds and rain can drastically reduce this time.

CONCUSSION

Often used in training exercises and as a distraction in close assaults, concussion rounds are non-lethal shells that burst with a loud noise and bright flash. They are intended to stun opponents rather than kill them.

DIRECTED PLASMA

Directed plasma rounds are an advanced version of shaped charge weapons, intended to destroy hard targets. They become available for pistols and rifles at TL16.

ELECTROMAGNETIC PULSE

This round unleashes a massive burst of electromagnetic radiation that does not harm living tissue but causes unshielded electronics to shut down for 1D minutes. Unshielded electronics of more than two Tech Levels lower than the round will be permanently fried, while all electronics of more than two Tech Levels higher will be completely immune.

EXTENDED RANGE

Extended range rounds use more efficient propellant or even a rocket boost to increase their velocity and therefore effective range. Artillery weapons may combine extended range ammunition with other types simply by adding their cost multipliers together.

FLARE

This is an illuminating round designed to shed light over a wide area. The round is fired into the air and then descends on a parachute (it therefore can only be used on worlds of Atmosphere 2+). Everything within the Blast area is illuminated as normal daylight. Thermal and light-intensification equipment is designed to cut out to protect the wearer's sight, so these rounds cannot be used to blind the enemy, although they will make advanced sighting gear less useful and thus level the playing field for those without it. The illumination will last for 1D + the planet's Atmosphere rounds.

FRAGMENTATION

This is an anti-personnel warhead, throwing out shards of shrapnel across a very wide area. If the weapon does not have a Blast trait, fragmentation rounds give it Blast 10.

FOAM

A foam round, when fired from grenade launchers or heavier weapons, disperses a sticky foam which temporarily incapacitates a target. If the damage inflicted exceeds a person's STR or a vehicle's Hull, ignoring all armour, the target is stuck to the ground or a nearby wall. Escape requires a Very Difficult (12+) STR check, which may be attempted once per round. A vehicle may be freed with a Difficult (10+) skill check, with a negative DM equal to the foam 'damage' divided by the vehicle's Hits, rounding up in the foam's favour. Foam rounds for shotguns become available at TL11 and are ineffective against vehicles with a Hull value greater than 4.

FUEL-AIR

A fuel-air round dispenses a cloud of highly flammable droplets which are ignited as they mix with air (this will only function on worlds that have an oxygen component to their atmosphere). The resulting airborne explosion has been compared to a nuclear detonation. If the weapon does not have a Blast trait, fuel-air rounds give it Blast 10.

GUIDED

Some warheads can be either guided by the operator or fitted with a self-homing capability. Guided rounds become available for rifles and pistols at TL10. The guided modification may be combined with other modifications simply by adding their cost multipliers together.

HIGH EXPLOSIVE ARMOUR PIERCING (HEAP)

High explosive armour piercing rounds use shaped charge warheads or similar technologies to penetrate thick armour before detonating inside the target. HEAP ammunition provides a weapon with an AP trait equal to double the number of damage dice it rolls, before the bonus dice is added for HEAP ammunition. Destructive weapons multiply this by 10.

INCENDIARY

Incendiary warheads are designed to set fire to things, causing flammable material nearby to catch fire. The round's Blast trait will be equal to the number of damage dice of the weapon.

NET

This round deploys a weighted net at a target but reduces the weapon's Range by 50%. A target hit by a net does not sustain any damage but is immobilised. The target can escape from the net by making a successful Average (8+) DEX check (1D rounds). If multiple targets are caught in a net, each must make a separate check to escape, with DM+1 for every other target who has already escaped. If assisted by someone not trapped, the target may add DM+2 to the escape attempt.

NEUROTOXIN

This round creates a cloud of gas that, if inhaled, will likely prove deadly. Any living target within the cloud that does not have a respirator or sealed suit will be attacked as if by a poison with a Very Difficult (12+) END check, Damage 1D INT, and Interval of one round. Gas clouds dissipate after 1Dx3 rounds, although heavy winds and rain can drastically reduce this time.

NUCLEAR

Highly illegal on nearly every world, these warheads create a small nuclear explosion wherever they land, laying waste to everything nearby. Nuclear rounds are only available for grenade launchers or other heavy weapons of 40mm or larger calibre at TL13 and above.

PLASMA

Plasma warheads are an advanced form of high explosive, designed to eliminate both soft and armoured targets, depending on what weapon they are fired from. Plasma rounds for pistols and rifles become available at TL16. If a weapon does not have a Blast trait, plasma rounds will give it Blast 3.

SMOKE

Smoke rounds create a thick cloud that disrupts vision. This imposes DM-2 to all attack rolls on targets within the cloud. IR vision completely bypasses this cloud of smoke. Smoke clouds dissipate after 1Dx3 rounds, although heavy winds and rain can drastically reduce this time.

SOLID SHOT

A basic anti-armour round, solid shot is essentially a pointed projectile of dense or hard material. Solid shot provides a weapon with an AP trait equal to half the number of damage dice it rolls, rounding up. If the weapon already has the AP trait, this is added to the final AP score.

THERMAL SMOKE

This acts as a smoke round but throws out hot particles that block IR vision as well. This imposes DM-2 to all attacks on targets within the cloud. Smoke clouds dissipate after 1Dx3 rounds, although heavy winds and rain can drastically reduce this time.

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